

Report
of the Governors
University of Alberta

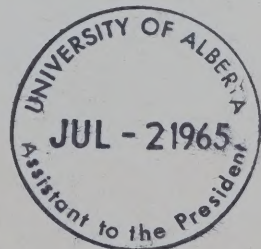


1963 - 64

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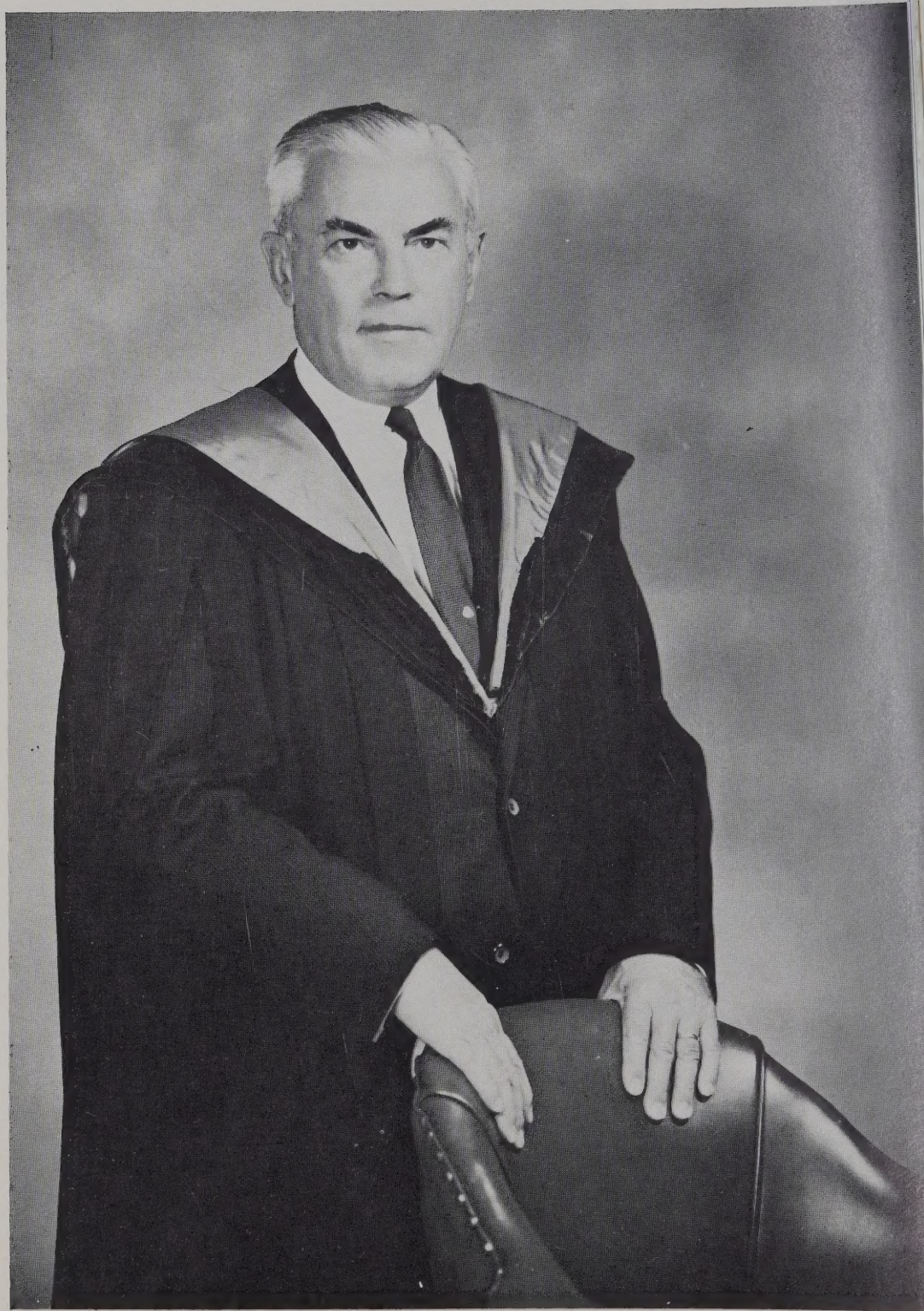
Preface

The PRESIDENT'S REPORT is a new publication of the University of Alberta designed for the interest of the general public. This first edition contains a report by President W. H. Johns on higher education in the Province of Alberta, followed by a pictorial and graphic review of the University year 1963-64. Further copies may be obtained by writing to the Information Office, University of Alberta, Edmonton.

The new PRESIDENT'S REPORT is also included in the more complete REPORT OF THE GOVERNORS as the introductory chapter. The REPORT OF THE GOVERNORS is primarily a report to the Legislature of the Province and has a limited distribution. Copies may be obtained by writing to the Office of the President.

Margaret A. Richards

Information Officer



DR. WALTER H. JOHNS, PRESIDENT OF THE UNIVERSITY OF ALBERTA

Annual Report of the President

1963-64

The growth of the University of Alberta on its two campuses in Edmonton and Calgary has been increasing at such a rate in the past five years that it became necessary for the governing bodies of the University, and the Executive Council of the Government, to place before the 1964 Session of the Legislative Assembly a number of proposals for the reorganization of the administrative structure of the University and for the support of higher education generally throughout the province.

A special committee of the Board of Governors has been at work reviewing the University Act and a Survey Committee on Higher Education, appointed by the Government, has been engaged in a study of both the long-term needs of the province for higher education and research and the best means of meeting these needs. The reports and recommendations of these committees are expected to result in substantial changes in the present University Act, and perhaps in the creation of new statutes to meet developing needs. At the same time two other committees have been set up to study university problems on a national scale. The first of these is a Commission on University Government, established under the joint auspices of the Canadian Universities Foundation and the Canadian Association of University Teachers, with support from the Ford Foundation. The second is charged with the task of studying the Financing of Higher Education in Canada and of making recommendations on the subject to the National Conference of Canadian Universities and Colleges.

In spite of these long-range studies, the Alberta Legislature at its 1964 Session felt it necessary to make provisional changes in the University Act and to institute a new Act known as "The University and College Assistance Act."

The first of these changes was specifically designed to provide for greater independence for the Calgary campus of the University, and it achieved this aim by authorizing a separate General Faculty Council, a separate Deans' Council, and a President who would be a member of the Board of Governors. A further amendment provided for the establishment of a Co-ordinating Council, made up of the Presidents, Deans, and senior staff members from both campuses, with responsibility for making recommendations on the affiliation with other colleges in the province, the conduct of professional examinations, the development of graduate studies, and any other matters of an academic nature which would be assisted by co-operative decisions of the two General Faculty Councils.

The University and College Assistance Act provides formulae for aid to the University and to public and private junior colleges affiliated with the University to meet the cost of operating these institutions, and to provide for assistance on varying terms for the physical facilities they require. It provides also for the establishment of a University Capital Development Committee made up of three government representatives

and three representatives of the Board of Governors to review the needs of the University for new buildings, alterations to buildings, equipment and furnishings, land, and other facilities of a capital nature.

These statutes, which were proclaimed shortly after being passed by the Legislature, will make significant changes in the administration of higher education in Alberta, and will pave the way for greater changes in the future.

The growth of the University can be measured in a number of ways—in larger enrolment, in additions to physical facilities, in the broadening curriculum, and in the increased activity of the members of the University community.

The increase in enrolment in the fall of 1963 was slightly less than had been anticipated, but it brought the numbers of full-time day students in Edmonton to 8,632 and in Calgary to 2,091, going well over the 10,000 mark for the first time in our history. Added to these are large numbers of part-time students and students in the Evening Credit Program on both campuses, and in other centres throughout the province. The registration of freshmen on the Edmonton campus decreased slightly this year from 2,290 to 2,152, although the total enrolment went up by over 600. This may be ascribed to the fact that a substantial increase took place in first-year enrolment on the Calgary campus as well as in the junior colleges affiliated with the University. Finally, the opening of the Northern Alberta Institute of Technology provided an alternative form of post-secondary education for a larger number of students throughout Northern Alberta. All this indicates that students who wish to carry on their studies beyond high school have a wider variety of opportunities, many of them closer to their homes and in courses more suited to their interests and talents.

It would be appropriate here to say a special word about our affiliated Junior Colleges and their development. Mount Royal Junior College has been associated with the University for many years and has recently begun offering University work again after a long interruption. This first year it has provided instruction for a total of 31 fully matriculated students, together with an additional group who are registered in a combined matriculation and University program. At the same time they have begun an experiment this year of admitting students in February and providing a full academic program terminating in August, with 45 students currently registered. These two programs offer a special service to students whose matriculation has not been completed by September when University courses ordinarily begin.

Lethbridge Junior College has 151 students in a variety of University courses on a full-time basis and an additional 40 students studying part-time. Camrose Lutheran College has 43 full-time and 42 part-time students and Collège Saint-Jean has 28 full-time students and 1 part-time student registered in its special program of bilingual teacher education. Thus an additional 298 students are proceeding towards University degrees on a full-time basis and 83 on a part-time basis. Most of these will register on one or other of the University campuses in the fall.

Patterns of enrolment at the University continued to change in other respects as well. Education still leads with the largest number of students, followed by Arts, Science and Engineering. Perhaps the most

significant increase was in Graduate Studies to a total of 792 on the two campuses, of whom over two hundred were candidates or provisional candidates for the Ph.D. In view of the desperate need for highly qualified staff members for our universities and colleges in Canada and throughout the world, and for men and women to fill senior positions in the secondary schools, in government, industry, and commerce, the promotion of graduate education and research is one of the most vital roles of a major university such as the University of Alberta. This is a very expensive matter, since it requires salaries for the best staff members, for whom alternative opportunities exist in the major universities of the world, and subventions for the graduate students themselves. These students must be, and are, among the best from the graduating classes of earlier years, and hence have the most attractive opportunities for employment on graduation. Many of these come from other parts of Canada, and, indeed, from nearly every major country in the world to study at the University of Alberta where they contribute to the body of new knowledge in their fields while advancing their own education. Although large numbers receive financial support from fellowships and scholarships offered by their own countries, by the National Research Council of Canada, the Commonwealth Scholarship Plan, or private donors, the largest proportion receive support from the University itself, for which they act in return as Teaching Assistants, Research Assistants or Service Assistants to the members of the academic staff.

The Council of the Faculty of Graduate Studies is continually vigilant to ensure that standards of excellence in their graduate degrees are maintained at levels comparable with those in the best universities in the world, and the reputation of the University as a leading centre for graduate study and research is growing rapidly.

The growth in student numbers, especially in graduate and professional Faculties, results in constant demands for new buildings. In the year under review the new Education Building, the Donald Ewing Cameron Library, the new Student Residences and associated Food Services Building (Lister Hall), the enlarged Nuclear Research Centre, the Armed Services Building, and the Structures Laboratory for Civil Engineering, were all completed on the Edmonton campus. In Calgary the new Library was opened, and plans were well advanced for a new Student Centre with residence halls attached, and additional buildings for Engineering, the Liberal Arts, and Science. Lister Hall had the distinction of winning a first award offered by "Institutions Magazine" for the best designed food service building of the year in any educational institution in Canada and the United States. This is a great tribute to the University staff, the provincial Department of Public Works, and all who had a share in the planning of the building. In their own way the other new buildings on both campuses form valuable and impressive additions to the physical facilities we so badly need.

In spite of the continued planning and construction of new buildings, we can never quite keep up with the needs for additional space. Two buildings are nearing completion on the Edmonton campus—the Household Economics Building and the Faculty Club—but the Social Sciences, the Biological Sciences, Engineering, and the Clinical Departments in Medicine are already handicapped by lack of offices, classrooms, and laboratories. Plans are going ahead for four major buildings to meet these

needs. The first to be completed will be a building for the Social Sciences on the corner of Saskatchewan Drive and 112th Street, to be known as the Henry Marshall Tory Building in honour of the University's first President. Even with these additions, there will be further requirements for Agriculture, Commerce, Fine Arts, Dentistry, Pharmacy, and Law. Emergency office accommodation can be found in Assiniboia Hall, which will no longer be required for a residence after this session, in various houses which have been purchased in Garneau, and in the old Education Building, which will house the Schools of Nursing, of Rehabilitation Medicine and the Department of Extension. Still other buildings will have to be planned for other Departments and Faculties, and sites will have to be found beyond the present limits of the campus.

The students have found that their Union Building, opened in the early 1950s, is already inadequate, and they have had a committee at work for the past two years planning a new and much larger building to be situated along the north side of 89th Avenue opposite the Physical Education Building. Plans for a new grandstand on the west side of the playing field are being studied, and the Campus Planning Committee is giving continual attention to the parking problem, which is one of the most intractable of any they must try to solve.

The academic life of the University continues to undergo rapid changes as well. The School of Physical Education, which we believe is outstanding in Canada, has been raised to the status of a Faculty—the first to achieve this status in the Commonwealth. Dr. M. L. Van Vliet, the Dean of the Faculty, has recently been given an Honor Award by the Canadian Association of Health, Physical Education and Recreation for his outstanding service in these fields. The Department of National Health and Welfare has selected the Edmonton campus as the site for a Physical Fitness Research Institute.

The Department of Modern Languages has been divided into three new Departments—Romance Languages, Germanic Languages and General Linguistics, and Slavonic Languages. The Department of Political Economy will separate into the Departments of Economics and Political Science on July 1st. The Department of Computing Science has been established as an integral part of the Faculty of Science, and already has a program of study for the Master's degree in effect.

The Faculty of Education, now the largest Faculty in the University, with 2,249 undergraduates and 81 graduate students on the Edmonton campus alone, has pioneered in helping establish a bi-lingual and bi-cultural program of teacher education in French and English in co-operation with Collège Saint-Jean, which we hope may provide a model for similar developments elsewhere in Canada. Dean Coutts also reports new developments in the field of teacher education for industrial arts, and the Faculty continues to give outstanding leadership in graduate education and research in its various branches.

The Faculty of Commerce has had another dramatic rise in enrolment, and now has 520 students, making it one of the largest Faculties of Commerce in Canada. Approval has been given to the offering of a program leading to the degree of Master of Business Administration, which will admit its first class this fall.

Approval has also been given for the offering of a degree program leading to the Bachelor of Fine Arts in Drama on the Edmonton campus,

which places the third of the triumvirate of Arts, Music and Drama in the same position of independence as pertains in the other two. Plans are going forward for creating from these three divisions of the Department of Fine Arts, three new separate Departments in the Faculty of Arts.

An interesting new development in the Faculty of Medicine has been the establishment of a Department of Continuing Medical Education, designed to make it possible for physicians throughout the province to learn and apply the modern medical knowledge that continually becomes available. A major revision has taken place in the Bachelor of Science program leading to a degree in Medical Laboratory Science, and this new program will be put into effect in September, 1964. This involves the consolidation of the two eighteen-week periods of summer hospital training into a single period of twelve months hospital instruction, to be conducted at the University of Alberta Hospital under the direction and supervision of the Faculty. This will overcome the difficulties of students taking a three-year program without a definite summer holiday period, and will enable the hospital clinical training portion of their program to be carried out directly under the supervision of the Faculty.

Perhaps the most significant feature of higher education in the major universities of Canada today is the increased activity of Faculty members in research and graduate teaching. Such increased activity is evident not only in the libraries and laboratories on our own campuses, but in the participation of our staff members in activities on a national and international basis, and in the visits to our campuses of the leading scholars and scientists from around the world, who come not only to attend institutes, seminars and symposia here, but to offer instruction as guest lecturers and professors to our own senior and graduate students and staff.

It would be impossible in the short compass of this report to list all the honours that have come to members of the staff, but a few examples may be cited as evidence of their recognition throughout the academic world. Dr. Ray Lemieux, Professor of Chemistry, has been awarded the Palladium Medal of the Chemical Institute of Canada for his outstanding research in organic chemistry. Professor H. E. Gunning, Head of the Department of Chemistry, has been elected a Fellow of the Royal Society of Canada and was chosen to give the Stacie Memorial Lectures in London last fall. Dr. Max Wyman, Dean of the Faculty of Science and Vice-President elect, was named President of the Canadian Mathematical Congress last year. Professor Lorch has been invited to lecture in a number of mathematical centres in Europe, Professor McNamee is to be Visiting Professor of Mathematics at the University of Oklahoma next year, and Professor Moser will participate in the foreign scientists program of the National Science Foundation.

Other members of our Faculty are serving in foreign countries on a variety of assistance programs. These include Dr. Mark Baron, Assistant Professor of Civil Engineering, Edmonton, who is serving in Nigeria; Professor H. R. McArthur, Department of Mechanical Engineering, University of Alberta, Calgary, who is working in Singapore; and Dr. Gordon Goundrey, Associate Professor of Economics, Edmonton, who is assisting the Government of Northern Rhodesia with their constitutional problems and their plans for establishing a university there. Professor Bryce Rollins of the Faculty of Commerce has accepted an appointment as Visiting Professor of Accounting at the University of Malaya.

Dr. W. C. MacKenzie, Dean of the Faculty of Medicine, has been elected to the Presidency of the Royal College of Physicians and Surgeons, Dr. R. A. Macbeth, Head of the Department of Surgery, has been named to the James IV Surgical Association Travelling Fellowship, and Dr. J. S. Colter and Dr. Neil Madsen of the Department of Biochemistry have been invited by the University of Brazil to assist in developing a program of graduate teaching and research there financed by the Ford Foundation.

The Faculty of Medicine this year celebrated its 50th Anniversary by a special Convocation, at which four outstanding leaders in Medical Science were awarded Honorary Degrees. They were Dr. R. Gordon Douglas, Professor of Obstetrics and Gynaecology at Cornell Medical College and a graduate of the University of Alberta, Dr. Rene J. Dubos, Professor of the Rockefeller Institute in New York City; Dr. Frank L. Horsfall, Jr., Director of the Sloan-Kettering Institute for Cancer Research; and Dr. Peter B. Medawar, Director of the National Institute for Medical Research in Great Britain and Nobel Laureate in Physiology and Medicine in 1960.

Among the special activities on the Edmonton campus were a Symposium on Fetal and Uterine Physiology sponsored by the Department of Obstetrics and Gynaecology, and the First Symposium on Muscle Structure and Function presented by the Departments of Pharmacology and Biochemistry and the Division of Neurology.

The Department of Industrial and Vocational Education sponsored a Conference on "Education and a Productive Society," which brought to the campus outstanding leaders in the field of Industrial and Vocational Education from Canada, the United States, and Great Britain. An International Conference on the Indigenous Languages of North America is planned for the summer, and the First Science Education Conference to be held outside the United States will be held shortly in Banff under the auspices of the Faculty of Education.

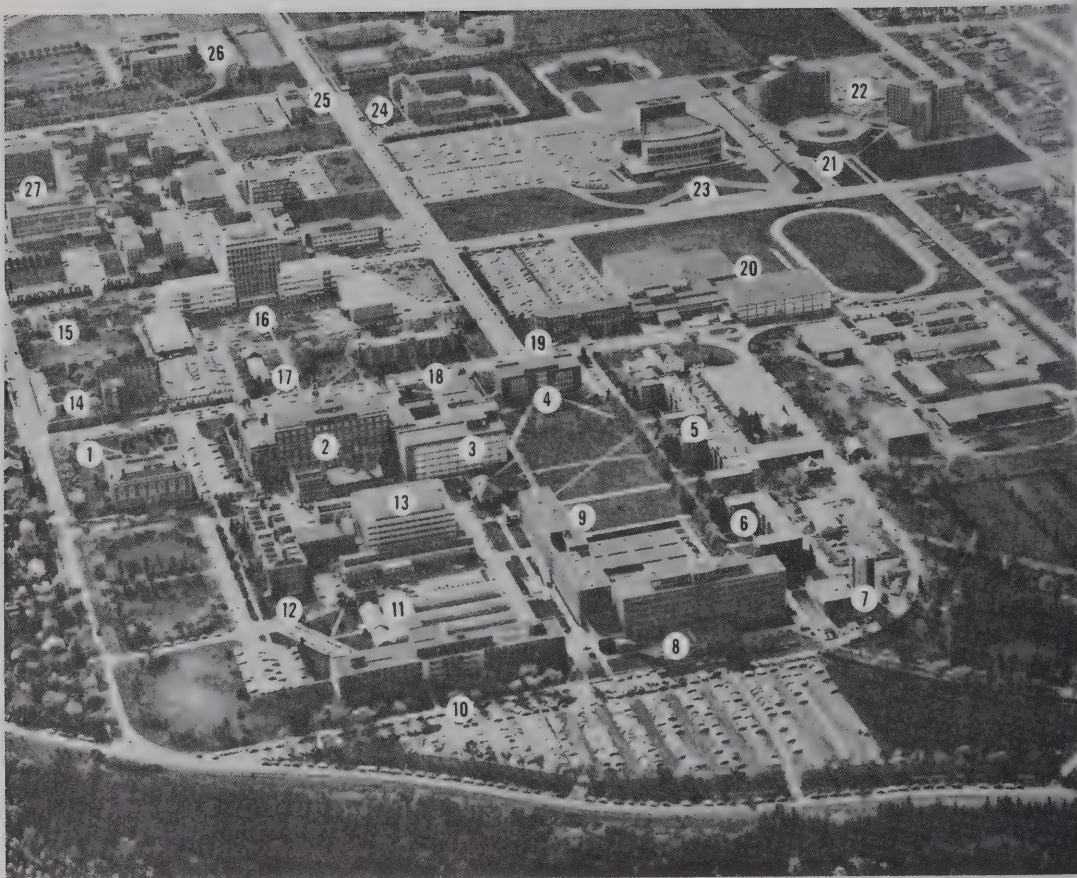
The policy of bringing distinguished visitors to the campus has been carried on again this year, and has provided valuable aid and stimulus, particularly to those engaged in graduate study and research. These visitors have included such men as Dr. K. L. Blaxter of the Hannah Dairy Research Institute in Scotland, a world authority on nutrition and the physiology of sheep and cattle; Dr. K. H. Callamon, Professor of Chemistry at University College, London, Dr. Paul Erdos, Professor of Mathematics, Hungarian Academy of Science, and scores of others from around the world. We once felt we were in a quiet backwater of science and scholarship, but we now feel very much a part of the universal fraternity of learning.

Each year brings many new faces to both our campuses to add to the strength of our Faculty and broaden our ability to serve society. At the same time we lose a number of highly valued men who have contributed much to our University life. This year we shall lose from the Edmonton campus Dr. H. S. Armstrong, who, after two years here, has won the high regard of all his colleagues, first as Dean of Science then as Vice-President. Fortunately he will not be lost to Alberta, since he will take on the heavy responsibilities of the Presidency on the Calgary campus.

Three of our most distinguished professors, each of whom has served the University for over forty years, retire this year—Dr. W. G. Hardy, Professor of Classics, Dr. R. B. Sandin, Professor of Chemistry, and Professor J. T. Jones, Department of English. Dr. H. Grayson-Smith, who has been Head of the Department of Physics for many years, and Professor J. A. Harle, Head of the Department of Electrical Engineering since 1947, will retire this summer as well. Dr. J. Gordon Parr, Professor of Metallurgy, leaves to become Dean of the Faculty of Engineering at the University of Windsor, and Dr. R. L. James, Head of the Department of Sociology, leaves for a post in Toronto. To all these men, and to the many younger members of the staff going on to other positions, we extend our thanks and best wishes.

These are exciting times. Science and technology produce new miracles of achievement almost daily in their search into the vast outer reaches of the universe and the sub-microscopic realms of the nuclei of living cells. Knowledge accumulates so rapidly that its dissemination, classification and preservation present administrative problems requiring complex solutions. The pace tends to leave the travellers a bit dizzy at times, particularly those who are the passengers rather than the pilots.

In all this progress, particularly in scientific fields, there is a growing realization that we need more people who can survey the scene objectively and give some assessment of our goals and of the significance of our progress as it concerns man himself. This is the greatest challenge universities have before them today.

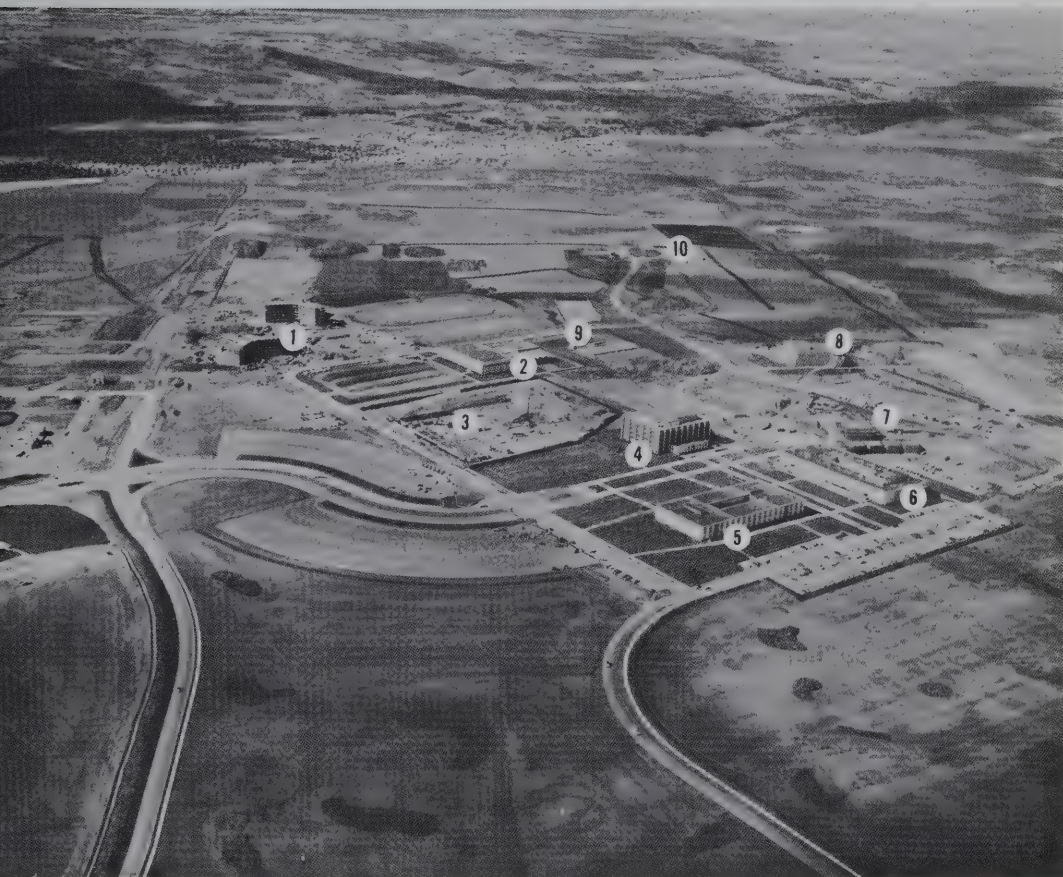


THE EDMONTON CAMPUS, 1963

- 1. Rutherford Library
- 2. Medical Sciences Building
- 3. Engineering Building
- 4. Administration Building
- 5. Pembina and Athabasca Residence Halls
- 6. Assiniboia Hall
- 7. Van der Graaff Accelerator Tower
- 8. Math-Physics Building
- 9. Chemistry Building
- 10. Agricultural and Biological Sciences Building
- 11. Greenhouses
- 12. Arts Building and Convocation Hall
- 13. Cameron Library
- 14. St. Stephen's College
- 15. Site of Household Economics Building
- 16. Education Building
- 17. Commerce Building
- 18. St. Joseph's College
- 19. Students' Union Building
- 20. Physical Education Complex
- 21. Lister Hall
- 22. New Residence Towers
- 23. Jubilee Auditorium
- 24. Nurses' Residence
- 25. Internes' Residence
- 26. Old Education Building
- 27. University Hospital

THE CALGARY CAMPUS, 1964

1. Residence Buildings
2. Physical Education Centre
3. Beginning of construction on Calgary Hall
4. Library
5. Arts-Education Building
6. Science Building
7. Lecture Theatre portion of the Science Complex and the beginning of the Biological Sciences Tower
8. First Engineering Building
9. Rinks, tennis courts and playing field
10. Buildings and Grounds area
11. Fenced Botanical Garden area



JUNIOR COLLEGES



LETHBRIDGE JUNIOR COLLEGE

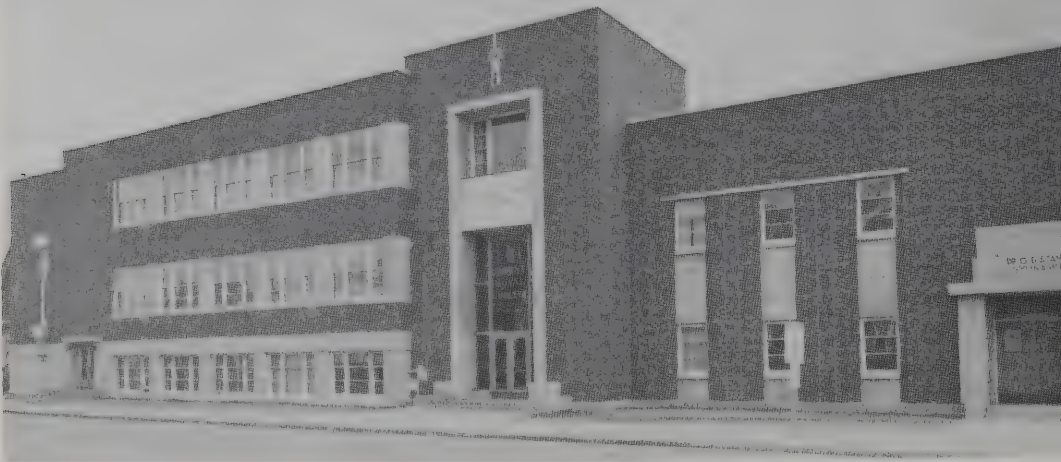


Convocation Centre



College Dormitory

CAMROSE LUTHERAN COLLEGE



MOUNT ROYAL COLLEGE

AFFILIATED INSTITUTIONS



MANIFF SCHOOL OF FINE ARTS AND CENTRE FOR
CONTINUING EDUCATION



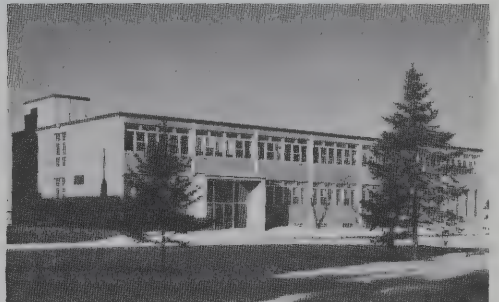
ST. JOSEPH'S COLLEGE



ST. STEPHEN'S COLLEGE



UNIVERSITY HOSPITAL



COLLÈGE SAINT-JEAN

NO. OF STUDENTS

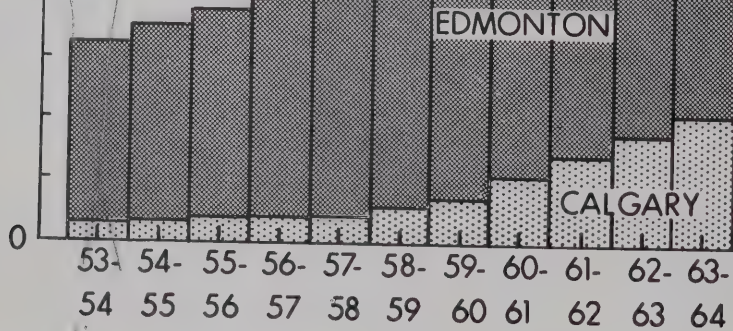
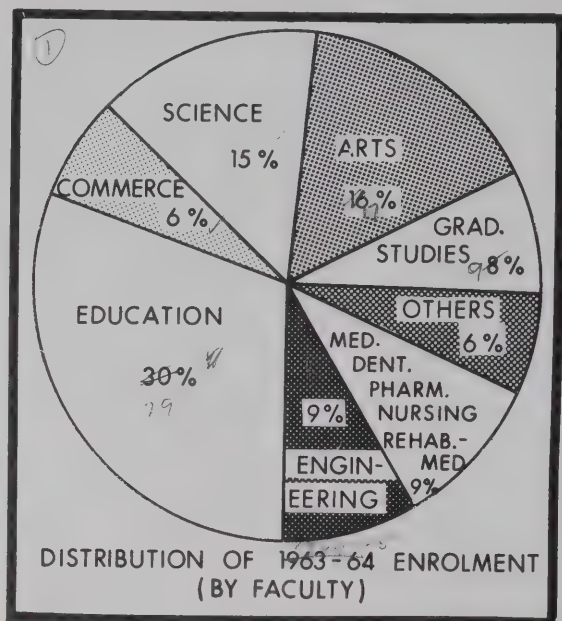
20,000

15,000

10,000

5,000

0



ENROLMENT OF FULL-TIME STUDENTS

ACTUAL: 1953-54 to 1963-64

ESTIMATED: to 1968-69

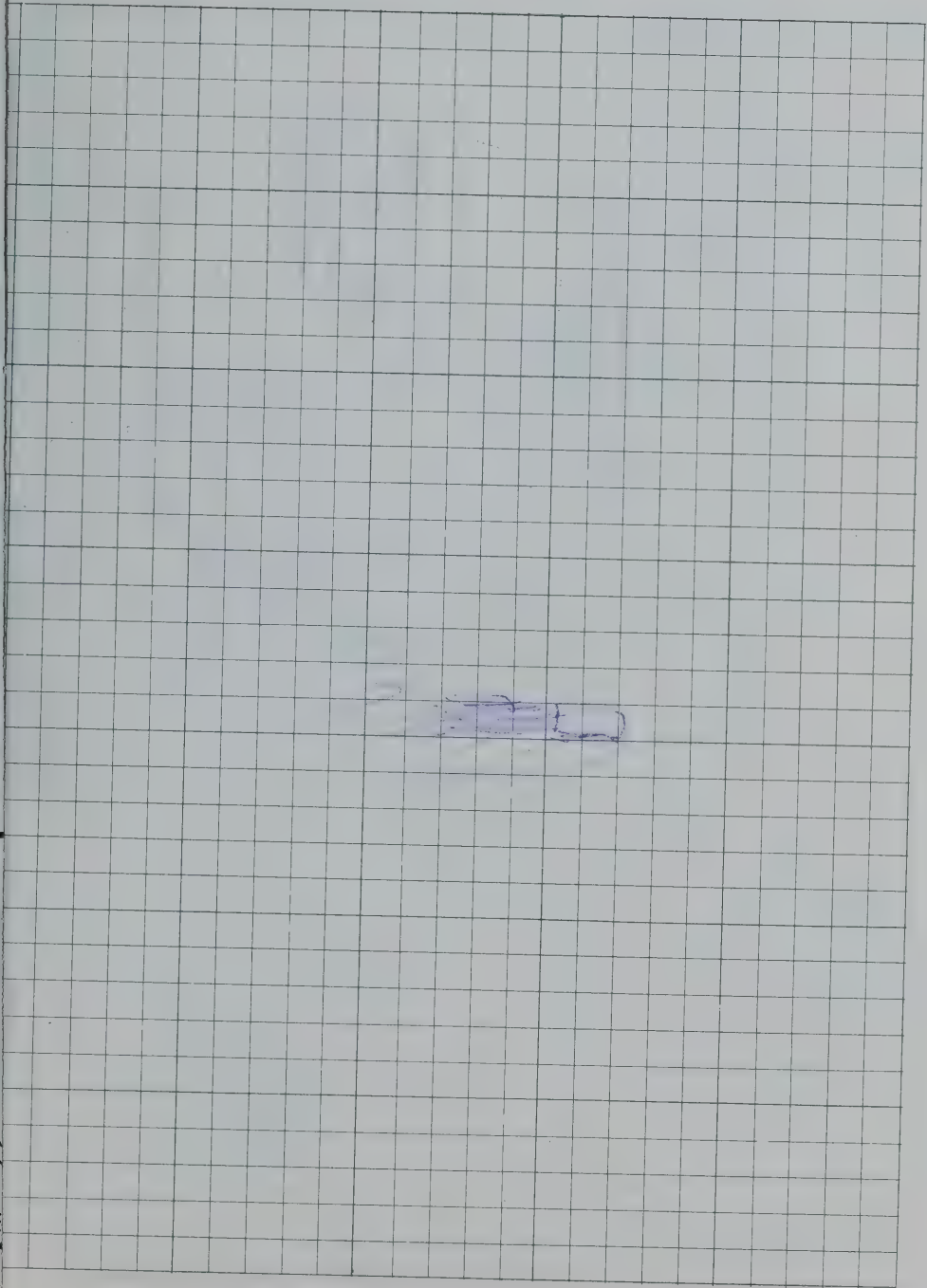
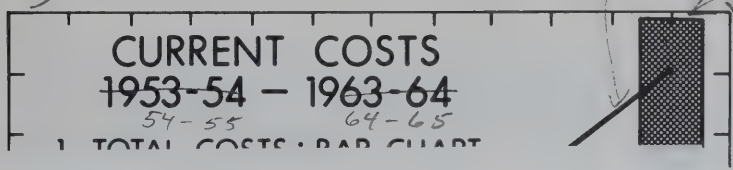
1969-70

addn
1969-70

extend chart up

cost per standard 64-65
up to \$1865

Total for 64-65
up to
22,200,000



TOTAL DOLLARS

64-65
up to

21
67
100
3

UES

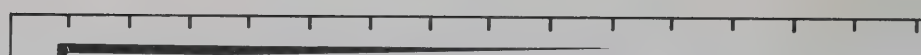
NO. OF STUDENTS

5,00

10,0

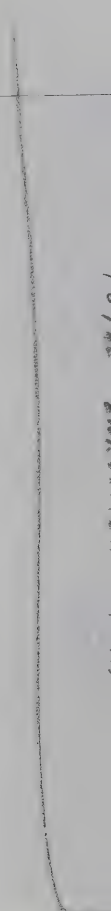
15,0

20,000



✓

15,0



extend chart up

cost pe. under 64-65
up to \$1865

Total for 64-65
- up to
22,200,000

CURRENT COSTS 1953-54 - 1963-64

54-55

64-65

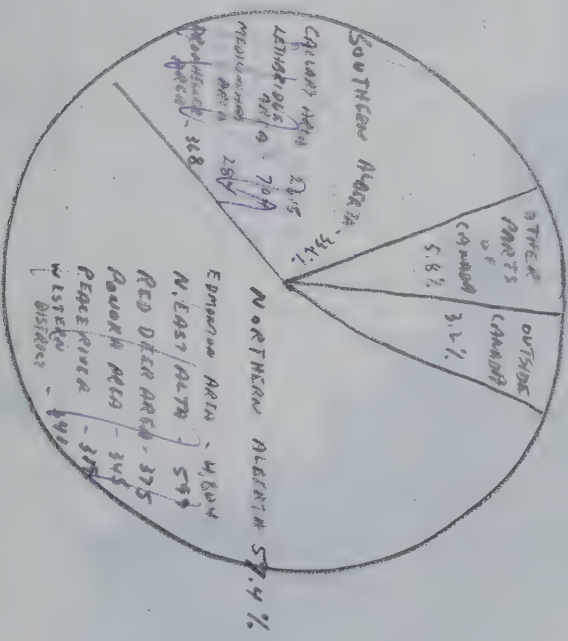
000,000

TOTAL DOLLARS

264-65
up to

within 21
ins 67
below 12
100
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...

ENUES



HOUSE ENROLLMENT AT THE UNIVERSITY OF ALBERTA

20,000 —————

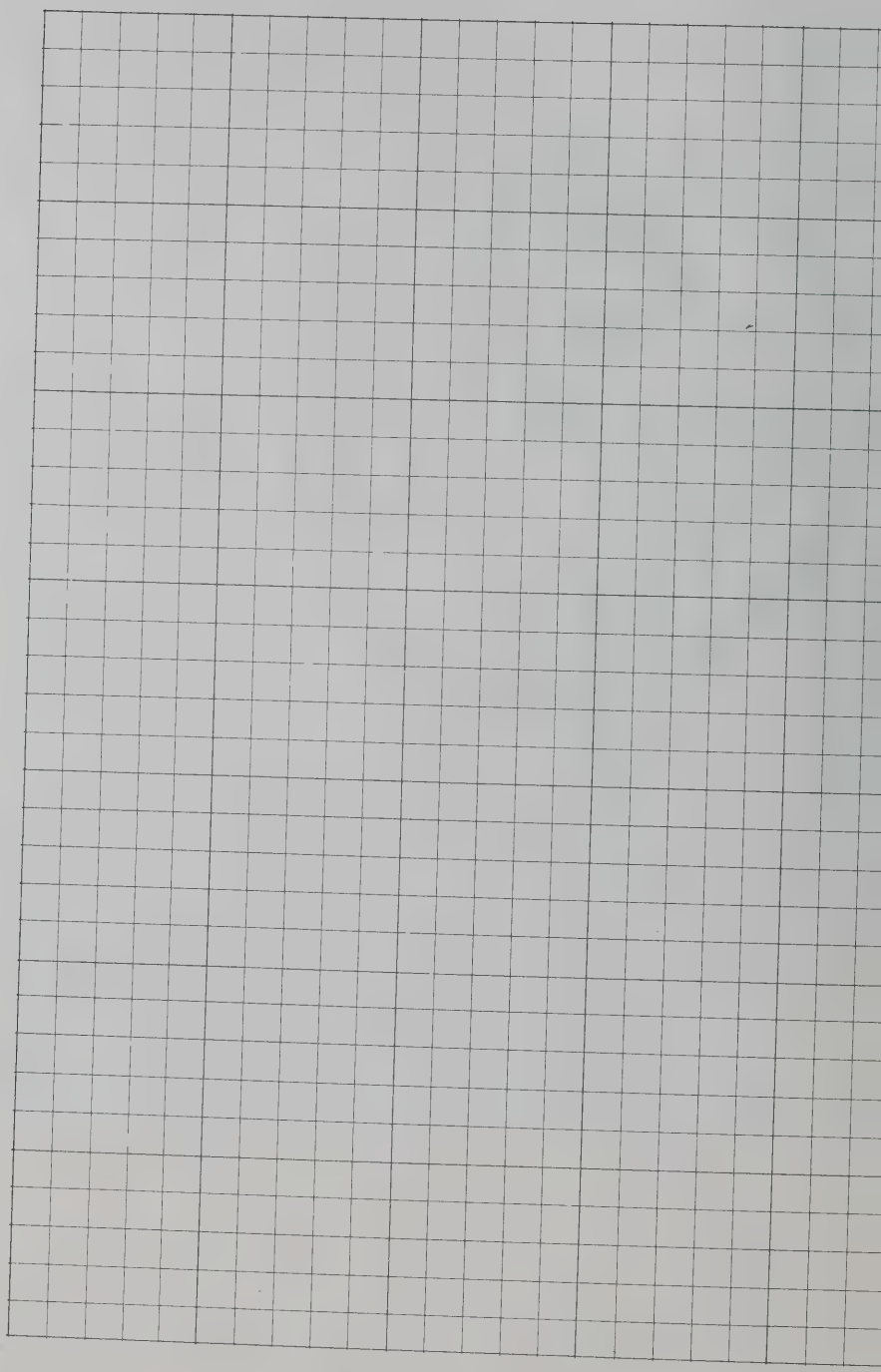


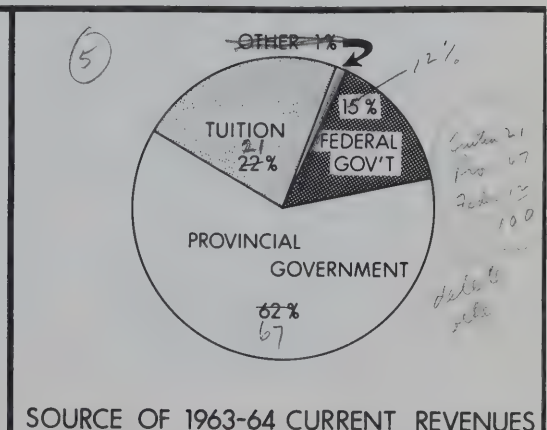
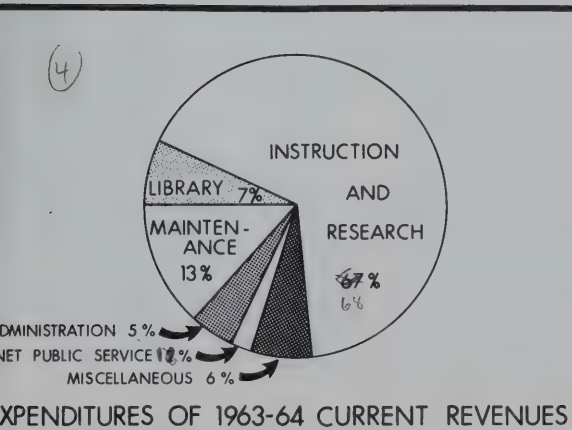
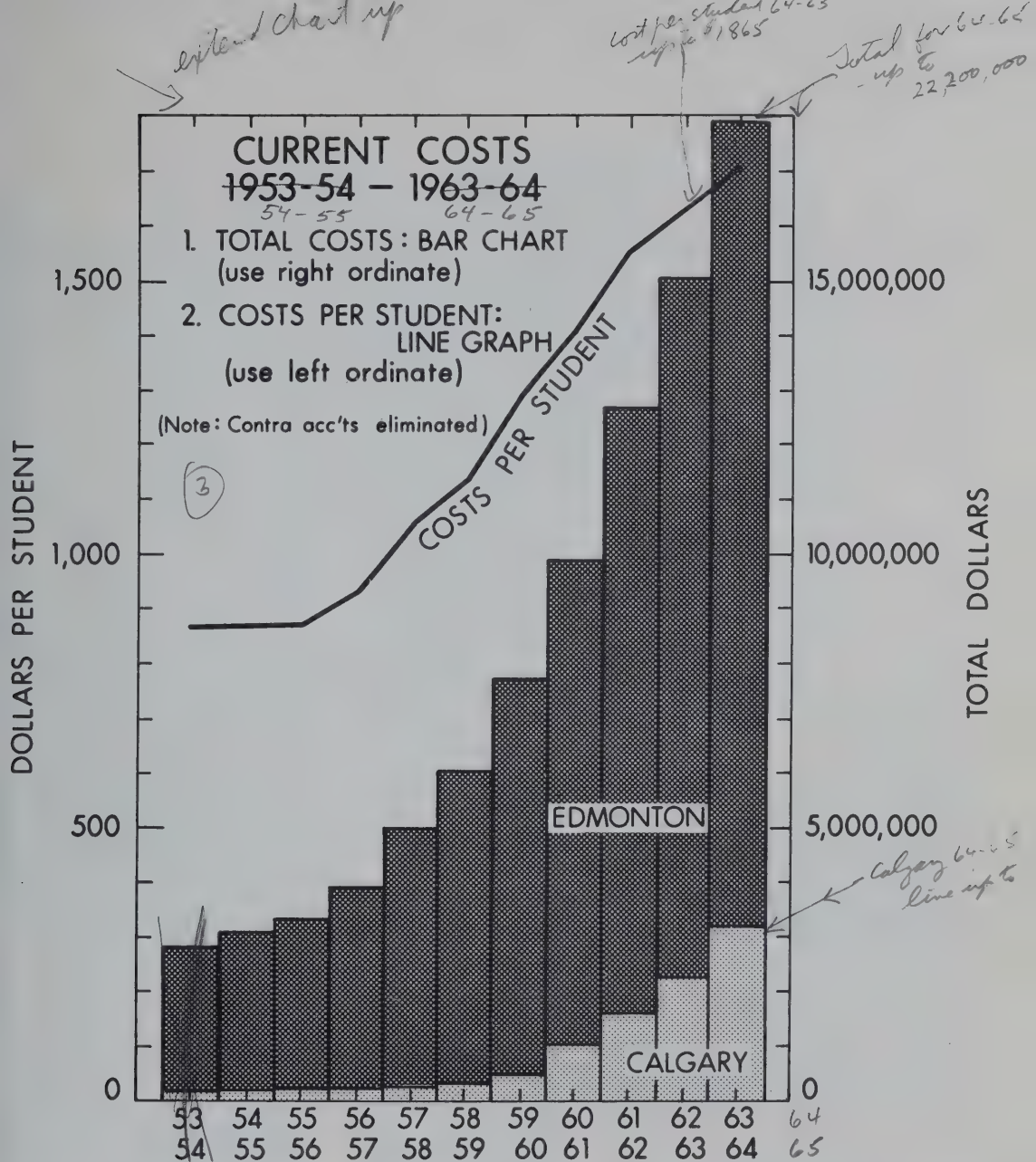
NO. OF STUDENTS

15,0

10,0

5,0





NEW BUILDINGS



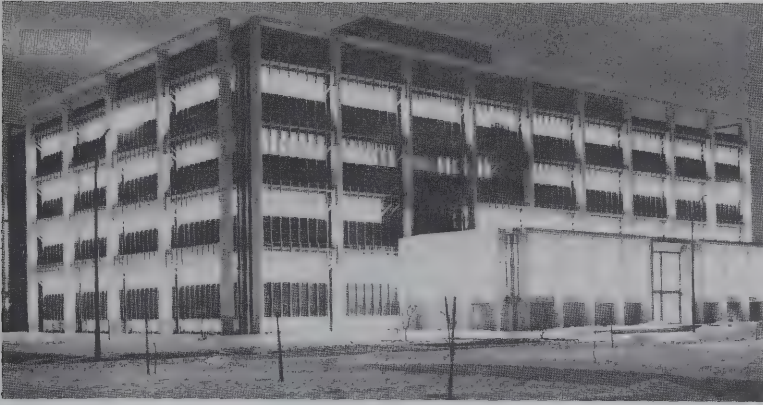
THE FACULTY OF EDUCATION BUILDING



THE DONALD EWING CAMERON LIBRARY



*Mrs. D. E. Cameron Officially
Opens the Library, May 28, 1964*



THE LIBRARY, UNIVERSITY OF ALBERTA AT CALGARY



THE LISTER HALL—STUDENT RESIDENCE COMPLEX



THE CAFETERIA, LISTER HALL



Mrs. Reg Lister Officially Opens the Complex

KEY APPOINTMENTS, RETIREMENTS, AND DEATHS

July 1, 1963 to June 30, 1964



Dr. F. P. Galbraith
Chancellor



Dr. H. S. Armstrong
President, UAC



Dr. Max Wyman
Vice-President (Academic)

1. EDMONTON

APPOINTMENTS:

Arts

Dr. W. A. S. Smith, Assistant Dean
Mr. R. G. Motut, Assistant Dean
Dr. R. J. Buck, Head, Classics
Dr. W. D. Gainer, Head, Economics
Dr. D. W. Wiedner, Head, History
Dr. G. R. Davey, Head, Political
Science
Dr. G. R. Hirabayashi, Head,
Sociology

Science

Dr. K. B. Newbound, Associate Dean
Dr. R. C. Jacka, Assistant Dean
Dr. D. B. Scott, Head, Computing
Science
Dr. A. L. Dulmage, Head,
Mathematics
Dr. Harry Schiff, Head, Physics

Education

Mr. W. Pilkington, Assistant Dean

Engineering

Dr. G. B. Walker, Head, Electrical
Engineering

Graduate Studies

Dr. E. J. Hanson, Associate Dean

Medicine

Dr. S. Kling, Head, Continuing
Medical Education

Physical Education

Dr. M. L. Van Vliet, Dean

OTHERS:

Rev. A. J. B. Hough, Director, Student
Counselling Services
Mr. R. E. Phillips, Superintendent of
Buildings
Mr. J. Stoneham, Director, Food Ser-
vices
Mr. M. Swenson, Students' Union Pro-
gram Director

RETIREMENTS:

Dr. Hugh Grayson-Smith, Head, Physics
Dr. W. G. Hardy, Head, Classics
Mr. J. A. Harle, Head, Electrical En-
gineering

DEATHS:

Dr. R. R. McIntyre, Honorary Professor
of Orthodontics
Dr. C. M. Learmonth, Medical Director,
Royal Alexandra Hospital and In-
structor of Anaesthesia
Dr. G. R. McDonald, Assistant Professor
of Pathology
Dr. A. H. MacLennan, Clinical Professor
of Obstetrics and Gynaecology
Mr. G. B. Taylor, Registrar '47-'58
Dr. B. M. Wheeler, Clinical Professor,
Medicine

2. CALGARY

APPOINTMENTS:

Mr. Paul Adams, Dean of Men
Miss Bevan Patterson, Dean of Women

SPECIAL CEREMONIES, 1963-64

SPECIAL MEDICAL CONVOCATION, SEPTEMBER, 21, 1963, EDMONTON

Honorary Degree Recipients: Dr. R. G. Douglas, Professor of Obstetrics and Gynaecology, Cornell Medical College; Dr. R. J. Dubos, Professor, Rockefeller Institute, N.Y.C.; Dr. F. L. Horsfall, Jr., Director, Sloane-Kettering Institute for Cancer Research; Dr. P. B. Medawar, Director, National Institute for Medical Research for Great Britain, and Nobel Laureate, 1960.



Pictured from left to right: Dr. W. H. Johns, President; Dr. F. L. Horsfall, Jr.; Dr. P. B. Medawar; Dr. L. Y. Cairns, Chancellor; Dr. R. J. Dubos; Dr. R. G. Douglas; Dr. W. C. MacKenzie, Dean of Medicine.

ALL CONVOCATION, NOVEMBER 9, 1963, CALGARY

Honorary Degree Recipients: Right Reverend G. R. Calvert, Anglican Bishop, Calgary Diocese; R. A. McKimmie, Q.C., Calgary Attorney; P. M. Sauder, Pioneer in Southern Alberta Irrigation Program.

SPRING CONVOCATION, MAY 27, 1964, CALGARY

Honorary Degree Recipients: D. E. Batchelor, Former Calgary Chief Commissioner; J. V. Charyk, Former Under-Secretary, U.S.A.F., President, Communications Satellite Corporation, Washington, D.C.; Miss M. I. Jackson, Science Educator.

SPRING CONVOCATION, PART I, MAY 20, 1964, EDMONTON



Pictured from left to right: Dr. C. M. Macleod, Chairman of the Board of Governors; Dr. W. H. Johns, President; G. R. Lyle; Honorable J. P. Page, Lieutenant-Governor; Mrs. S. H. McCuaig; Judge L. Y. Cairns, Chancellor; Y. Kurimoto; Dr. H. S. Armstrong, President of UAC.

Honorary Degree Recipients: Yuichi Kurimoto, Founder and President, Nagoya Commercial University, Japan; G. R. Lyle, Director of Libraries, Emory University, Atlanta; Mrs. S. H. McCuaig, Distinguish Citizen and long-time friend of the University.



Chancellor Cairns on the right is shown receiving the Alumni Golden Jubilee Award from Dr. D. R. Stanley, President of the Alumni Association.

SPRING CONVOCATION, PART II, JUNE 3, 1964, EDMONTON

Honorary Degree Recipients: Dr. F. C. MacIntosh, Professor of Physiology, McGill University; Miss H. G. W. McArthur, National Director of Nursing Services, Canadian Red Cross Society.

*Reports of the
Faculties, Schools and Administrative
Offices, 1963-64*

To the Lieutenant-Governor in Council

Sir:

On behalf of the Governors of the University of Alberta, and in accordance with Section 28 of an Act respecting the University of Alberta, the undersigned have the honour to submit through the Minister of Education the report of the University of Alberta, setting forth the revenue and expenditure for the year ending March 31, 1964, and investments as they stood at the end of the fiscal year. Appended to this report is the report of the President of the University, in which the academic work of the University for the Year July 1, 1963 to June 30, 1964, is dealt with in detail.

C. M. MACLEOD, *Chairman*
W. H. JOHNS, *President*

January 15, 1965

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Report of Mr. A. D. Cairns, Registrar

Student Enrolment

The Registrar's Office on the Edmonton Campus registered a total of 13,606 students in the University year extending from July 1, 1963 to June 30, 1964, an increase of 1,403 over the previous year. Of the total, 3,259 were enrolled in the 1963 Summer Session at Edmonton, 1,259 in the Evening Credit Program and the balance in daytime classes in the 1963-64 Winter Session. The enrolment of full-time candidates for degrees or diplomas in the Winter Session excluding nurses-in-training at the University Hospital, was 8,091, an increase of 10% over the corresponding enrolment in 1962-63.

The largest numerical increases occurred in the Faculties of Education (272), Commerce (125), Science (118), Graduate Studies (115) and Arts (84). The greatest percentage increases were experienced in the Faculties of Physical Education and Commerce (both approximately 32%), Nursing (28.5%), and Agriculture (26%).

About 7½% of our full-time students in the Winter Session were classified either as Landed Immigrants (378) or Foreign Students attending on student visas (235).

Detailed figures on enrolment will be found in Appendix IX of this report.

Admissions

During the period from August 14 to September 18, 1963, the Admissions section was faced with the formidable task of processing 3,113 applications for admission. Only about 120 applications were completed and processed before the August 14 deadline, and the assessment of many applications had to be delayed until September 15 or later because their documentation was not complete until that time.

The pressure on the Admissions section was aggravated in August and September by the necessity of dealing with over 600 applications from teachers for evaluation of their education for salary purposes, and by a substantial number of applications from persons seeking certificates of preliminary standing or equivalent standing in Chartered Accountancy. In addition they were besieged with requests for certificates of eligibility for students entering the September classes in Schools of Nursing throughout the Province. Their work was further hampered by numerous visits, telephone calls, letters and telegrams from applicants, who, having waited until the deadline to apply, then expected a decision by return mail. In many of these cases no action had been possible because their transcripts had not yet arrived.

The chain of circumstances referred to above created a rather critical situation in which the Admissions section found themselves with still a substantial number of admission or refusal letters to send out in the week preceding registration, in spite of the many hours of over-time that had been spent from the middle of August on. One or two of the newer and less experienced members of the staff were unable to cope with this sort of pressure, with the result that a small number of admission cases had not been completely processed before registration week. Unfortunately, these cases were not drawn to the attention of Mr. Burns until the following week.

To guard against a recurrence of such incidents the following measures have been taken:

- (1) the Admissions filing system has been re-organized to reduce the possibility of misplaced files;
- (2) a "check off" system has been introduced to keep applicants informed as to the progress of their applications;
- (3) the Admissions section has been asked to regard September 11th as the deadline for terminal action on all applications.

In addition, we are considering steps that may be taken to guard the core members of the Section against unnecessary interruptions in their work during the peak period in August and September.

Examinations

The Registrar's Office scheduled and made all other arrangements for Summer Session finals on August 14 and 15, 1963; for supplemental examinations in Medicine,

Dentistry, and Dental Hygiene beginning August 19, 1963; for regular supplementals in other Faculties and Schools, beginning September 3, 1963; for special supplementals beginning September 28, 1963; for January mid-session examinations held from January 13 to 18 inclusive, 1964; for the main series of final examinations held from April 21 to May 5, 1964; and for the series of final examinations in Dentistry, Dental Hygiene, and Medicine, held from May 4 to May 14, 1964.

A total of 787 examinations were scheduled during the January test week involving 475 different courses. In the series of examinations held in April and May, 740 different courses were involved and an aggregate of 41,469 students.

Convocations

During the University Year 1963-64, three regular Convocations were held: the Fall Convocation on November 9, 1963, the Part I Spring Convocation on May 29, 1964 and the Part II Spring Convocation on June 3, 1964. At these three Convocations 1,921 degrees in course were conferred, including 46 Ph.D.'s, bringing the total number since the University's establishment to 27,023.

Registration

Prior to the 1963-64 Session, a mass registration of students had been held in the University Rink. However, it became apparent in the fall of 1962 that the numbers of students and departmental representatives involved in registration would exceed the capacity of either the Rink or the Main Gymnasium in another year or two. Rather than gamble on the adequacy of such accommodation in the fall of 1963, it was decided to decentralize the part of registration devoted to the assignment of students to classes. First each student reported to a designated room, according to an alphabetical schedule to receive his "Permit to Register" cards. Next he reported to another room, where one or more Faculty representatives were in attendance, to complete his course registration form. Then he reported according to a pre-determined priority system to the Departments offering the courses entered on his registration form; there he was assigned to his classes and issued with the appropriate Course Cards and Class Admission Cards. Finally, he reported to the "Deputy Registrars" located in the Lecture Wing of the Mathematics-Physics-Chemistry complex to complete certain other forms and to hand in all forms required by the various University offices.

This system was carefully planned to provide an even flow of registrants through each of the four stages of registration, and to avoid the congestion and queues that had characterized the mass registration in the fall of 1962. The reaction of staff and students (with the possible exception of certain Gateway reporters) appeared to be quite favorable. The priority system of reporting for assignment to classes worked particularly well, and greatly reduced the frustrations that students had experienced in previous years in trying to work out a conflict-free timetable.

Records

At the Canadian University Registrars' Conference held in Banff in January 1962, it was solemnly agreed that registrars should take steps as soon as possible to make transcripts more meaningful. In ordering a new supply of record cards for 1963-64 we therefore redesigned the card not only so that posting of records could be done electronically, but also so that the student's final average mark in a course would be followed by the course average and the number of students enrolled. This additional information will appear on the 1963-64 records of all students who commenced their studies here either in the fall of 1962 or 1963. To the best of my knowledge this University will be the first one in Canada to react in a progressive way to the resolution passed at the 1962 Conference.

Report of Mr. John Nicol, Registrar, Calgary

1. Enrolment

In the University year 1963-64 there were 4,165 students registered in courses on the UAC campus, as compared with 3,471 in the previous year.

There were 1,033 students enrolled in the 1963 Summer Session at UAC; 733 students enrolled in the 1963-64 Evening Credit Program at Calgary and other

centres from Red Deer south; and 2,399 students enrolled in day-time classes in the 1963-64 Winter Session.

The enrolment of full-time day time students in the Winter Session 1963-64 was 2,040, an increase of 339 over the corresponding enrolment of the previous year.

This enrolment of full-time day time students in the Winter Session 1963-64 included 60 graduate students.

Detailed enrolment figures will be found in Appendix IX of this report.

2. *Examinations*

Examination scheduling for mid-session and final examinations was undertaken by Dr. J. E. L. Peck and Mr. M. R. Williams of the UAC Computing Centre. The results were entirely satisfactory, and their program for the IBM 1620 has now been published.

Besides arranging for mid-session and final examinations, the Registrar's Office provided space and invigilators for the examinations of professional bodies, and for other Universities offering examinations extramurally.

3. *Convocation*

Two Convocations for the conferring of degrees were held in Calgary during the session 1963-64. At the Fall Convocation on November 9, 1963, 101 degrees were conferred on UAC graduates. At the first Spring Convocation to be held in Calgary on May 27, 1964, 167 degrees and 2 diplomas were conferred on UAC graduates.

4. *Registration and Records*

During the spring and summer of 1963 a great deal of time was spent in designing and printing forms for use in registration and record-keeping at UAC.

In April 1963 an effort was made by the Faculties of Arts and Science, Commerce, and Education to secure a tentative choice of studies from each student for the session 1963-64 and expedite registration procedures in September.

During the summer of 1963 an intensive program of typing students' permanent record cards was completed as part of the shift from Edmonton to Calgary in record-keeping for UAC students.

Since then an Identification Number has been assigned to each student, and the Registrar's Office files have been reorganized on a numerical basis.

5. *University Computing Centre*

Following registration in September, 1963, students' data was transferred to punch-cards by the newly organized Tabulating Centre. The material since provided has included examination timetables, assorted statistical data, class lists, Revisions, Committee reports, and Statement of Marks.

6. *Class Schedules*

The Registrar's Office produced a Class Schedule for 1964-65 in consultation with department heads.

7. *Scholarships and Awards*

The Registrar's Office worked with the Administrator of Student Awards, Edmonton, the Chairman of the Scholarships and Awards Committee, and Student Counselling Services in administering Scholarships and Awards at UAC. The difficulty of maintaining liaison among these groups suggests that a separate Office of Student Awards should be set up at UAC shortly.

8. *Graduate Studies*

The Registrar's Office registered graduate students at UAC in September, 1963, and acted as a post-office between the Dean of Graduate Studies in Edmonton and department heads at UAC. The Registrar also served as secretary to the UAC Graduate Studies Committee.

9. *Space Committee*

The Registrar's Office Chief Clerk has continued to act as secretary of the UAC Space and Alterations Committee.

10. *Calendars*

The Registrar's Office co-ordinated the production of Faculty Calendars for the session 1964-65.

Report of Dean C. F. Bentley of the Faculty of Agriculture

The Faculty of Agriculture has had a fine year with several important developments in the academic area.

The Department of Agricultural Economics has received approval for course offerings which enable students to choose specialization in one of Agricultural Marketing, Farm and Ranch Management, Agricultural Business Management or General Agricultural Economics. Although the Department was established only two years ago student enrolment, including graduate students, is very gratifying. Public interest in the new department and its activities is also keen. This has been reflected in a positive way by the substantial research grants which the Department has received.

Grants in support of research in the departments of the whole Faculty have increased gratifyingly and the total value of all grants exceed two hundred fifty thousand dollars for the year. Many grants support graduate student research and there are now over eighty graduate students in the Faculty, almost half of whom seek the P.D. degree. All departments have graduate students and it is indicative of the kinds of research being done that most departments are making good use of the services of the Computing Centre and of radio isotopes, while some projects are making use of such tools as X-ray diffraction equipment, an electron microscope and a mass spectrometer. The availability of such equipment on the campus greatly facilitates much of the Faculty of Agriculture research while obviating the necessity for costly duplication of expensive apparatus.

It is difficult and risky to select one research highlight from among scores of interesting projects in progress. However, there is an item which illustrates the advances being made by agricultural research and which has great potential appeal to urban as well as rural Albertans. Work in the Department of Plant Science has shown that there are very good prospects that it may become practical to use a selective herbicide, dicamba, for removal of quack grass from established Kentucky blue grass lawns. The potential usefulness of this same chemical for treatment of quack grass patches in farm fields has yet to be determined. Farm and city residents alike are hopeful that this work will bring an end to a persistent costly and annoying nuisance. The research involved in determining and predicting the mode of action of such agricultural chemicals vies with modern medical research in complexity and employs the tools and techniques common in all fields of physical and biological science today.

One notable administrative change has taken place during the year. Because a majority of students in courses offered by the Genetics Department are in the Science or Arts Faculties the Department of Genetics, while retaining membership in the Faculty of Agriculture, has also become a department in the Faculty of Science. This development nicely illustrates the increasingly basic nature of agricultural research. The Department of Genetics at the University of Alberta has developed from what was originally applied plant and animal breeding.

As a consequence of initiative by the Department of Animal Science Dr. K. L. Blaxter of the Hannah Dairy Research Institute, Ayr, Scotland, a world authority on nutrition and physiology of sheep and cattle, spent a month at the University of Alberta as a lecturer, jointly sponsored by the Nuffield Foundation and the National Research Council of Canada. While he was engaged in giving his fascinating series of lectures here it was announced that Dr. Blaxter has been awarded the Gold Medal of the Royal Agricultural Society in recognition of his outstanding research.

Other distinguished visitors during the year included Dr. John Pesek of Iowa State University, an international authority on the use of linear programming for determination of optimum soil management programs for crop production; Dr. Ralph Nelson of South Dakota State College who presented a series of seminars dealing with relationships between economic progress and agricultural improvements in developing countries; Dr. Alden Crafts, Head of the Department of Botany, University of California; Dr. R. R. Riel, Professor of Food Science, Laval University; and Professor S. V. Wantrup, Professor of Agricultural Economics, Uni-

versity of California, a world authority on the economics of irrigation developments; to name only a few.

Several staff members did work abroad during the year. Dr. Zalik and Professor MacHardy returned from sabbatical leaves spent primarily in Israel and Scotland where they pursued their special research interests. MacHardy's research work in Scotland, involving use of computer techniques to determine optimum management programs for beef cattle feeding, was of such great interest that it was the subject of a half hour B.B.C. television program. Professor Wood of the Dairy Science Department is spending a sabbatical year in New Zealand, one of the foremost dairy countries of the world. Dr. McElroy attended a special course on ruminant nutrition sponsored by the British Council of Edinburgh. Several other staff members participated in international scientific congresses held overseas.

In honor of the late Professor E. H. Strickland, first professor of entomology at the University of Alberta, initial steps have been taken to establish within that department, the Strickland Memorial Library.

Three staff members were elected fellows of scientific societies: Dr. Clegg in the Institute of Biology, and Drs. McElroy and Combs in the American Association for the Advancement of Science.

Enrolment in Agriculture has increased rapidly during the last three or four years, the number of undergraduates during 1963-64 exceeding the number that was predicted for 1980 in a projection made only a few years ago. The increase in graduate student numbers has been proportionately even faster. The Pre-Veterinary Medicine program continues to be exceedingly popular although the new College of Veterinary Medicine is to be located at the University of Saskatchewan.

The Campus Planning Committee recognized the need for additional facilities for Agriculture three years ago. The situation has now become acute due to increases in student numbers, postdoctoral fellows and staff additions. Because of space shortages most departments of the Faculty have been unable to accept all good graduate students wishing to study here. At the invitation of the Campus Planning Committee the Faculty has renewed its request for an addition to the Agriculture Building. Research work of the Faculty, now limited by space problems, can expand little if at all until additional facilities become available.

A variety of other notable events have marked the year. The Faculty presented one of the invitational papers to the Seminar on Agriculture sponsored by the Alberta Government in December 1963. That presentation was favorably received and as a consequence of subsequent requests for copies the total distribution was about 1,500. The Department of Agricultural Economics has done some innovating. An Agricultural Economics Advisory Committee consisting of representatives of about 18 farm organizations has been formed. The committee is proving to be an effective link between the Department, farm organizations and farm people. Members of the Committee are enthusiastic because they are getting new information and insight concerning the relationships between economic principles and farm problems. The Department of Animal Science has received an additional capital grant to complete facilities at the Kinsella Ranch. The first field day there is planned for June 22. The Department of Soil Science has concluded a research project, undertaken in 1950 at the request of the Government of Alberta, studying the irrigability of problem soils concerned in an often proposed irrigation development. The final report, which should be very useful to the Government, was submitted late in 1963. After thirty-three years of continuous operation crop sequence and soil fertility experiments at the Soil Science Plots University Farm have been terminated because of urbanization developments. The unique work done there has contributed important knowledge to soil management and fertility in western Canada. The Department of Entomology has acquired a section of virgin land for long-term ecological studies. The site, only 40 miles from Edmonton, is on George Lake.

In concluding this report I wish to specially acknowledge the assistance and cooperation I have received from Drs. McElroy, Robblee, Andrew, Combs, Love

and Robertson, during periods when I was absent from the campus during the past year.

Report of Dean D. E. Smith of the Faculty of Arts

In common with the rest of the University, the Faculty of Arts continues to grow. During the year under review, 1,163 full-time students were registered in the regular winter session in degree programs offered by this Faculty. A further 105 students were registered in courses credited toward a degree in the Evening Credit Program. The Faculty of Arts is thus second only to the Faculty of Education in terms of student enrolment.

The work of the Faculty extends far beyond students working for degrees offered by the Faculty of Arts. Many of its courses are required, or can be chosen as options, by students in every other Faculty and School in the University. To meet the teaching needs for all these purposes, a large instructional staff is required: there were more than 125 full-time members of the permanent academic staff, with many more Visiting Professors, Sessional Lecturers and Graduate Teaching Assistants.

In recent years I have reported on the separation of the Faculties of Arts and Science, which were once joined in a single Faculty. The same tendency is to be found in the separation of large departments within the Faculty of Arts. During 1963-64 the Board of Governors approved the separation of the Department of Modern Languages into three new departments: the Department of Germanic Languages and General Linguistics, the Department of Romance Languages, and the Department of Slavonic Languages and Literatures. It also approved the separation of the Department of Political Economy into two: the Department of Economics and the Department of Political Science. These Departments will function separately in the 1964-65 academic year.

Professor E. J. Hanson, formerly Head of the Department of Political Economy, has become Associate Dean of Graduate Studies. Two new Department Heads were, therefore, appointed to succeed him; Professor G. R. Davy will be Head of the Department of Political Science, and Professor W. D. Gainer will be Head of the Department of Economics. Professor E. J. H. Greene, formerly Head of the Department of Modern Languages, will continue as Head of the Department of Romance Languages. Associate Professor Alison Scott has been appointed Acting Head of the Department of Germanic Languages and General Linguistics, in the absence of Dr. Reinhold, on sabbatical leave; he will become Head of the Department on his return. Assistant Professor J. L. Laychuk has been appointed Administrative Officer of the Department of Slavonic Languages and Literatures, pending the appointment of a permanent Head for that Department.

Professor L. G. Thomas has resigned as Head of the Department of History, and has been granted sabbatical leave for 1964-65. He will be replaced by Associate Professor D. L. Wiedner, who has been appointed Chairman of the Department for five years. Dr. R. L. James has resigned from the academic staff and from his appointment as Head of the Department of Sociology and Anthropology. He will be replaced by Professor G. K. Hirabayashi.

Associate Professor J. W. Bilsland, of the Department of English, has completed his period of appointment as Assistant Dean. Associate Professor W. A. S. Smith, of the Department of Psychology, and Associate Professor R. G. Motut, of the Department of Romance Languages, have been appointed to replace him, and to extend the assistance given me by senior members of the academic staff.

Students registered for the first time in the new program for the Bachelor of Fine Arts degree, during 1963-64. All of the students in the old program for the Diploma in Art took advantage of the opportunity to transfer to the new program; and a total of 14 students were enrolled.

When separate Faculties of Science and of Arts were created, the new general program for the B.Sc. and B.A. degrees was continued in both Faculties. Special arrangements were made to co-ordinate the development of curricula by a joint committee, to review changes, and a joint meeting each year of the Councils of the two Faculties. Several joint committees were organized to consider changes in some

of the regulations which are common for both Faculties. These arrangements were used for the first time in 1963-64; and the resulting decisions provide a useful example of interfaculty co-operation.

The Joint Curriculum Committee, acting for this year under the chairmanship of Dr. M. Wyman, Dean of Science, reviewed a number of enquires and proposals from departments and from the two faculty offices. On a very few specific details, the two Councils had different views, and agreed in the joint meeting to establish different procedures. On all other matters the joint meeting agreed that the policies and procedures recommended by the Joint Committee on Curriculum would be adopted by both Faculties.

A Joint Committee on Honors was established, to continue the functions of the Committee on Honors of the old combined Faculty of Arts and Science. This Joint Committee will review all proposals for changes in the curriculum of Honors programs; on these matters, it will forward its recommendations to the joint meeting of the two Councils. It will also review the progress of Honors students, and report separately to the individual Councils, its recommendations regarding the award of degrees with Honors and First Class Honors, and the award of medals. These arrangements were followed without difficulty throughout 1963-64.

A Joint Committee, under the chairmanship of Professor R. G. Baldwin, reviewed faculty regulations requiring that a student complete three full academic years before receiving a general degree, and that registration in any twelve-month period be restricted to one-third of the courses in the general program. The joint meeting of the two Councils approved the Committee's recommendation that students with good academic standing might be allowed to accelerate their studies after the first year. Under these new regulations, by the use of Summer Sessions and by an increase in the number of courses taken in the second winter session, such a student may graduate in the Fall Convocation, two years after first registration as a freshman. The Committee's recommendation that certain students be allowed to proceed more slowly than normally, without penalty, was also approved.

Over a period of several years, there has appeared to be an increasing number of half-year courses recommended by various departments in Arts and Science, and approved by the Faculty Councils concerned. A joint committee, under Professor E. Reinhold, had been appointed (before the separation of the two Faculties) to consider the implications of this apparent trend; it reported to the two Faculty Councils. The Committee confirmed a clear trend toward an increasing number of half-year courses. The practice in various departments varies considerably, and the variation is apparently governed by differences in the subject matter of the various disciplines. The Committee believed that there are sound academic reasons for the establishment of half-year courses in some disciplines, and felt that this trend should continue without the imposition of fixed rules for or against such a development. This trend toward some half-year courses in a university organized on a full-year basis, is quite different from any possible development of a semester system of organization; any serious proposal for a change to that system would have to be discussed by the General Faculty Council, and many other implications of such a change would have to be considered. The report was approved by the joint meeting of the two Councils.

The plans of many departments in the Faculty were greatly facilitated when the Board of Governors approved construction of the proposed Henry Marshall Tory Building. This building will house six departments, all concerned with the social sciences; five of these are now in the Faculty of Arts, and one is in the Faculty of Science.

The various departments continued their steady development of undergraduate and graduate instruction, and the research of graduate students and staff members. Some of the more outstanding developments require special mention:

1. The Drama Division of the Department of Fine Arts was honored at a ceremony in the White House in February, 1964, for the work done in encouraging new playwrights.

2. The Department of Germanic Languages and General Linguistics are able to arrange for a collection of photocopies of manuscripts and other primary source material on the work of Georg Kaiser, from the Academy of Arts in Berlin, and a private collection in Switzerland. The University of Alberta will now have the most complete collection of this material existing anywhere in the world. The University and the Consulate of the Federal Republic of Germany collaborated in the opening of this archive in the Cameron Library, by a representative of the Academy of Arts at Berlin.
3. Professor J. R. Royce, of the Department of Psychology, has been elected to the Council of Representatives of the American Psychological Association, representing one of the divisions of that Association.
4. The Department of Sociology and Anthropology contributed to the expedition of students from the Kwansei Gakuin University of Japan, in Canada. This group of graduate and undergraduate students from Japan will climb Mount Logan in the Yukon Territory, and will combine archaeological and zoological studies in the expedition. They established headquarters in the Department, and used some of our facilities in planning final details of the expedition.

Report of Dean M. H. Scargill of the Faculty of Arts and Science, Calgary

The most important developments within the Faculty of Arts and Science during the past academic year have been the creation of a fully autonomous Faculty Council, the appointment of department heads, and an extension of graduate work to the point where every department may offer graduate programs leading to the Master's degree, and three departments, Chemistry, Mathematics, and Physics, may offer programs leading to the Doctor's degree. With these significant advances, there is nothing to prevent the Faculty of Arts and Science from developing in whatever way is considered most satisfactory to the Calgary campus.

Of great interest is the establishment of a Department of Archaeology in Calgary. Headed by one of North America's leading Archaeologists, Dr. R. S. MacNeish, this department is the first of its kind in Canada. It will educate students for a variety of positions and will help to prevent the present flow of potential archaeologists to other countries. The department will concentrate on the archaeology of the New World, with particular emphasis on western and northern Canadian studies.

Four other new departments have also been established: a Department of Biology, which includes the former Departments of Botany and of Zoology; a combined Department of Philosophy and Classics; and separate Departments of Political Science and of Economics, to replace the former Department of Political Economy. The creation of the Department of Biology paves the way for increased attention to the Biological Sciences in Calgary.

The Faculty of Arts and Science has shown great expansion both in the number of students and in the number of staff. Full-time students have increased from 651 to 811. Honors students have increased from 72 to 116. Forty-three graduate students are working in various departments. The teaching staff has grown from 96 to 123.

The Faculty of Arts and Science during the past year has been host to its first Visiting Research Professor, Dr. W. S. Avis, who has been engaged in work under the auspices of the Lexicographical Centre. Other distinguished visitors have included Professor Gwyn Jones, of the University of Wales; Professor F. E. L. Priestley, of the University of Toronto; Dr. A. S. Watt, of the University of Cambridge; and Dr. N. Tinbergen, of the University of Oxford.

In August, 1963, the Department of Chemistry was host to the International Symposium on Solvation Phenomena, with one of its members, Dr. P. J. Krueger, acting as chairman. The Symposium was attended by some 130 scientists from various parts of the world.

The Department of Physics has been particularly active in research into the physical phenomena of the upper atmosphere. The department has participated in more Canadian rocket flights for research purposes than have all other Canadian

Departments of Physics combined. This is a notable record and worthy of great praise.

The Department of Sociology and Anthropology is to be congratulated on having published in Calgary the first edition of the *Canadian Review of Sociology and Anthropology*. Dr. H. Zentner is managing editor of the *Review*.

During the summer of 1963, Dr. J. B. Hyne, Head of the Department of Chemistry, gave a series of lectures at various British Universities. Professor A. R. Prince of our Department of Biology, was invited to Ottawa to advise on the establishment of a Canadian Society of Botanists.

Members of the Faculty of Arts and Science have published or read a substantial number of papers. Of particular interest is the fact that four students of our Department of Psychology have produced work of such high calibre that they were asked to deliver papers at the Annual Meeting of the Canadian Psychological Association.

Report of Dean Hu Harries of the Faculty of Commerce

Growth and increased student registrations in the Faculty of Commerce occurred during the period from July 1, 1963 to June 30, 1964. Over 225 new students were admitted to the Faculty in the last term, resulting in the Faculty of Commerce becoming one of the largest Commerce faculties in Canada, with an enrolment of 520 in Edmonton and 125 in Calgary. Ninety-two students graduated at the 1964 Spring Convocation resulting in the largest graduating class to date in the Faculty.

Graduate Program

The Board of Governors of the University of Alberta, approved a Master of Business Administration program to commence in the 1964-65 term. Associate Professor Charles A. Lee is Acting Chairman of the Division of Graduate Studies.

The program is designed for students who desire a broad preparation for management positions in industry and government, and consists of two years of course work and a thesis in the area of specialization. Initial enrolment is limited to 15 students.

Academic Staff and Administrative Changes

New academic staff joining the faculty were: Assistant Professors, W. R. Badun, H. S. Dulat, D. A. Harris; Lecturer, R. A. Denham. During this period, Assistant Professor A. G. Perroni was made Acting Chairman of the Division of Business Policies, replacing Associate Professor B. Rollins, who was appointed to the University of Malaya for an 18 month period.

R. A. Denham was appointed Acting Secretary for the Faculty of Commerce, replacing J. D. Kyle, who has taken a position in industry.

Associate Professor G. R. Feiwel received his Ph.D. from McGill University (Spring 1964).

Assistant Professor D. N. Thompson was awarded an Advanced Graduate Fellowship for study at the University of California. He is the first Canadian to receive this award. In addition, Mr. Thompson received a Ford Foundation grant.

Faculty Activities

Two major programs involving students, staff and business executives were held during the year.

Banff, Commerce Student Seminars—This program was held for four days immediately following final examinations, at the Banff School of Fine Arts. The purpose of the seminars was to provide the students and business executives with an opportunity for intensive and intimate discussions over a four day period. One hundred and sixty third-year students, staff and businessmen participated in this event. The event was an unqualified success in meeting the objectives set for it.

Student Business Day—This program took place early in December and attracted over 600 students, staff, and businessmen. The purpose of this afternoon was to provide an informal opportunity to consider the opportunities available for students

and the calibre of students available at this university. The event was very successful and there were many favourable comments expressed.

As in past years our program of Industrial Seminars was continued. Under the direction of Associate Professor D. Goodale, members of the business community met to hear various speakers, including Mr. Basil Dean, publisher of the Edmonton Journal; Mr. G. Hamilton, City Commissioner and others.

All members of the staff were active in visiting Edmonton High Schools to present a university and Faculty of Commerce viewpoint.

Several staff members participated in numerous programs administered by the Department of Extension, including the Registered Industrial Accountants course, Real Estate course and Management Development Program.

As in the past, the Faculty has actively participated in the various business programs offered at the Banff School of Fine Arts.

Research

The Faculty is pursuing active research in several areas and during the past year published a study by Associate Professor G. R. Feiweil titled "Cost—The Various Meanings of the Concept". This is the third publication in the Faculty's Research Studies in Business" Series. Other papers covering current areas of interest are at present being prepared.

Other

A meeting of the Faculty and Mr. J. R. B. Jones, Campus Planning Co-ordinator, was held. During this meeting major concern was expressed about the increasingly inadequate facilities now used by an enlarged Faculty of Commerce.

Report of Dean H. R. MacLean of the Faculty of Dentistry

The present registration in the faculty is as follows:

(a) School of Dental Hygiene:

First year	15
Second year	20
Total	35

(b) Faculty of Dentistry:

First year	56 (40 Alberta residents)
Second year	52
Third year	43
Fourth year	41

Total	192 undergraduate students
(c) Graduate Students	4

Included in the above are five European graduates, taking further training in order to qualify for a degree and licensure in Canada.

There were over two hundred applications for the 1963-64 class. Eighty-five of this number met the minimum requirement standards, and fifty-seven were accepted for registration. Those accepted for registration included all of the Alberta resident applicants who met the necessary standards. Residents of British Columbia and Saskatchewan were given the next preference.

There are approximately one hundred and forty in-province applications to date for the 1964-65 session.

There are seventy-five academic staff members—sixteen full time and fifty-nine part time. Staff meetings are held every other month throughout the session, commencing in September, where review of educational methods, curriculum, or a scientific topic is presented for discussion.

At least thirty percent of the undergraduate students require some form of financial assistance. A large part of this is provided through the provincial grants and loans, various scholarships, the armed services program, and to a limited degree, from the Kellogg loan fund in dentistry.

The first class of thirty-eight dental assistant students from the Northern Alberta Institute of Technology worked under supervision with the senior students for a two month period of practical clinical training.

It is significant to note the dental service rendered to the community and to referred cases from various areas of the province: 1,949 patients were treated in the general clinic, 1,148 received treatment from the dental hygienists, and 623 from the children's department; 784 patients were treated at the University of Alberta Hospital where the senior students and dental hygienists are on block assignments and a dental resident intern is on duty.

A number of staff members have attended short courses, workshops and conventions. An evening course of lectures for all the faculty members was provided by Dr. Tuba, Professor of Biochemistry, on the subject of General Biochemistry.

Research is progressing favorably. Nine staff members received operating grants for the support of research for the past year in the amount of approximately \$63,000.00.

The following are the titles of investigations:

1. Factors influencing the propagation of Herpesvirus in animal cell cultures and in experimental animal infections.
2. The influence of water-borne floride on human tooth morphology.
3. Eruption of the teeth and growth of the jaws in children from birth until three years of age.
4. A method for the photoelastic stress analysis of the remaining structures of various cavity preparations.
5. An investigation of the possible significance of the developing vascularity in the palatal tissues during normal and abnormal closure of the palate.
6. An investigation of the activities of multinucleated giant cells which are associated with root resorption and with reparative granulomata.
7. Studies on the developmental morphology of the temperomandibular joint and the mandible.
8. The influence of intestinal absorption on body fluids.
9. Mucoproteins in gingival tissue in health and disease.
10. Absorption from the gastrointestinal tract in health and disease.
11. Metallurgical fundamentals of dental alloys and the development of dental materials: Amalgam and Gold alloys.
12. Epidemiological studies on the efficacy of floride dentifrices.
13. Field studies on the susceptibility of school children to dental carries.

Five summer research assistants, who were dental undergraduates, were employed. In addition, four students from other faculties obtained work in this area.

There is one special student, and three in the Master of Science program in Graduate Studies.

Among the professional activities of the staff, it should be noted that Dr. R. V. Blackmore is a member of the Dental Section of the National Research Council; Dr. G. H. Gibb is a member of the National Examining Board of the Canadian Dental Association; Dean H. R. MacLean is President of the International College of Dentists, and a member of the Executive Council of the American Association of Dental Schools; Dr. C. W. B. McPhail is a member of the Special Committee on Manpower and Auxiliaries of the American Association of Dental Schools and Dr. D. R. Stewart was recently elected a member of the American Academy of Crown and Bridge.

Leave of absence has been granted to Drs. Basaraba and Youdelis, who are presently registered in graduate programs at the University of Washington in Seattle.

The faculty is co-operating with the Provincial Laboratory in the extension of exfoliative cytology services, which will include the oral region.

Three short courses were offered during the 1963-64 session in the fields of Dental Practice Administration, Crown and Bridge and Orthodontics.

All of the senior class took the National Dental Board Examinations and were successful.

Four of the Hygienists wrote the American National Board Examinations in Dental Hygiene and were successful.

Thirteen scientific papers were published by members of the staff during the last year.

Report of Dean H. T. Coutts of the Faculty of Education

PART I

I have the honor to present this report of the activities of the Faculty of Education, Edmonton, for the 1963-64 university year. Additional information relating to students in the Faculty of Education is included in the report of Dr. J. W. Gilles, Director of the Summer Session and Evening Credit Program.

1. Accommodation

The highlight of the year was the move to the new Education Building on 87th Avenue and 113th Street. This well-equipped building has made possible a stronger and more varied teacher education program.

2. Registration

During the year, the Faculty of Education, Edmonton, maintained active records for 2,348 (2,136) resident undergraduates, 1,247 (1,101) Evening Credit Program students, 2,696 (2,121) Summer Session students, 17 Diploma in Education students, and 89 (74) full-time graduate students.

3. Degree Conferred

The following degrees were conferred during the year:

	October 1963	May 1964	Total
B.Ed.	226 (229)	176 (155)	402 (384)
B.Ed. in Industrial Arts	1 (3)	0 (1)	1 (4)
B.Ed. in Agriculture	0 (0)	1 (0)	1 (0)
Total	227 (232)	177 (156)	404 (388)

4. Certificates Recommended

The following are the numbers of candidates recommended for Standard E, Standard S, and Professional Certificates:

	October 1963	May 1964	Total
Standard E Certificate	118 (91)	233 (119)	351 (210)
Standard S Certificate	100 (110)	413 (399)	513 (509)
Professional Certificate	223 (187)	355 (363)	578 (550)
Total	441 (388)	1,001 (881)	1,442 (1,269)

5. Diplomas in Education Recommended

	October 1963	May 1964	Total
Diploma in Education	10	28	38

6. Faculty Organization

The Joint Committee to Co-ordinate Curriculum in the Faculties of Education, Edmonton and Calgary continued to function.

An Audiovisual Media Center was set up under Dr. J. O. Fritz as Co-ordinator.

7. Curriculum

Only minor changes were made in the course and program offerings of the Faculty.

A graduate diplomas program in vocational guidance drew fifteen candidates.

8. Staff

Helen M. Diemert, J. M. Higgins, Dr. R. S. MacArthur returned after a year's leave-of-absence.

During 1963-64, Professors Muriel A. Affleck and W. F. Coulson were on leave-of-absence.

The following joined the staff in September 1964: Associate Professor W. D. Dannemaier (Educational Psychology); Assistant Professors T. R. Jensen (Industrial and Vocational Education), Madeleine Monod (Secondary Education), and John O. Regan (Secondary Education and Student Teaching).

Sessional assistance was given during the year by T. P. Atkinson (Elementary Education—Mathematics), Dr. W. J. Bruce (Secondary Education—Mathematics), M. W. Campbell (Secondary Education—Business), N. J. Chamchuk (Secondary Education—Mathematics), Ethel M. Christensen (Elementary Education—Art), L. S. Dawson (Secondary Education—Business), J. T. McBurney (Student Teaching), John Jenkinson (Educational Foundations), M. W. MacDonald (Elementary Education

—Art), Florence I. McKie (Elementary Education—Reading and Language), Dr. E. Miklos (Educational Administration), J. J. Nearing (Secondary Education—Social Studies), Dr. C. C. O'Brien (Educational Psychology), J. D. M. Pelletier (Student Teaching), W. E. Robinson (Industrial and Vocational Education), Olga Shklanka (Elementary Education—School Libraries), J. J. Wine (Educational Psychology), Jean A. Young (Elementary Education—Social Studies), and H. W. Zingle (Educational Psychology).

Dr. W. D. Neal, Director of the Social Services Branch of the Department of Education in Western Australia was a guest professor in the Department of Educational Administration.

R. D. Armstrong, Helen M. Diemert, Dr. Geraldine M. Farmer, Dr. M. Gulutsan, Dr. S. Hunka, Evelyn Moore, M. F. R. Smith and Dr. R. W. Stadt were promoted to the rank of associate professor.

C. St. John will be on leave-of-absence during the 1964-65 session while pursuing graduate studies at the University of Toronto.

During the year two members of staff had the Ph.D. conferred on them: R. J. C. Harper (Edinburgh) and M. R. Lupul (Harvard). G. L. Berry had the Ed.D. degree conferred by the University of Colorado.

Dr. W. B. Elley resigned at the end of December 1963 to take up a post on the staff of the University of Auckland.

Resignations to become effective August 31, 1964, have been received from J. M. Higgins, who has accepted a position with the University of Florida, Dr. R. W. Stadt, who has accepted a position with the American Baking Company, Dr. S. Trieger, who has accepted a position with Temple University, and Dr. L. F. Troutner, who has accepted a position with the University of California at Davis.

9. Professional Activities

Activities of local, provincial, regional, national and international significance continue to engage members of staff who are called upon to give professional service and leadership in a variety of ways. Further indication of this is apparent in the reports of the Department Heads.

10. Graduate Study, Research and Publication

All departments of the Faculty were serving graduate students through the regular and summer sessions. Both staff and graduate students were active in research and publication during the year. Dean H. T. Coutts served as Acting Director of Research for the Alberta Advisory Committee on Educational Research and the Faculty Research Committee, and Dr. M. D. Jenkinson as Assistant Director and Secretary. Dr. H. E. Smith continued as editor of *The Alberta Journal of Educational Research* and the *Research Newsletter*.

11. University Demonstration School

June 30, 1964, will mark the closing of the University Demonstration School which, for many years, has made a distinct contribution to the Faculty of Education. Special mention must be made of the professional service rendered to the University by those who have been the teachers and administrators of this school.

PART II

Departmental Reports 1963-64

The reports of the six Departments of the Faculty of Education give fuller information concerning activities in 1963-64. The Dean is appreciative of the loyalty and co-operation of the academic and clerical staff, of the staff of the demonstration school, and of all others who have contributed in any way to the operation of the Faculty during the year.

(a) *Department of Educational Administration*—A. W. Reeves, Head

During 1963-64 the Department of Educational Administration offered its customary graduate and undergraduate programs during the winter session, inter-session and the summer session.

This year several changes were made in the organization of graduate work. Previously candidates for the M.Ed. degree were able to take the program through

attendance at summer session only; courses were completed in the summer session and the thesis was done extramurally. However, many students found it very difficult to complete their research project under this arrangement. As a result the Department introduced in 1963 a Graduate Diploma Program consisting of course work only which could be completed entirely by summer session. Following completion of the Diploma a student, provided he is admissible to the Faculty of Graduate Studies, may transfer to the degree program with advanced standing. Effective in 1963 all candidates for the M.Ed. degree are required to be in full-time attendance for at least one academic year.

The number of intramural graduate students is increasing. In 1963 twenty-eight were in attendance and in 1964 over forty have been admitted. This year the Department has graduates from seven Canadian provinces, as well as representatives from Australia, Japan, Jamaica and the Philippines. In 1963-64 three graduated with the Ph.D. and twenty-two with the M.Ed. degree.

During the year it has become quite apparent that there is a marked increase in the demand for persons with advanced study in Educational Administration.

On the basis of a four-part series on "The Teen Age Subculture", a contribution by Professor W. D. Knill, *The Saskatchewan Bulletin* (the official journal of the Saskatchewan Teachers' Federation) has been honored with the Edpress Award of the Educational Press Association of America.

(b) *Department of Educational Psychology*—G. M. Dunlop, Head

In addition to offering basic courses to undergraduates, the staff of the Department was active in research, graduate studies, preparation of guidance counsellors, school clinicians and teachers of the mentally and physically handicapped. Staff members served on numerous university, professional, and community committees. Their record of extension activities was impressive.

During the year the staff of the Department of Educational Psychology were involved in a variety of research activities reflecting their major interests. It is worthy of note that graduate students in educational psychology are gaining increasing competencies in programming research data for analysis in the Computing Centre.

Graduate students are being drawn increasingly from countries outside Canada. Twenty-six intramural students were registered in 1963-64, 12 on doctoral and 14 on master's programs. Two will receive the Ph.D. at spring convocation.

Three significant publications of members of the Department are a spelling series by Dr. G. M. Dunlop, *The Cognitive Processes* by Drs. Harper, Anderson, Christensen and Hunka, and *The Northern Rhodesia Mental Ability Survey, 1963* by Dr. R. S. MacArthur, S. H. Irvine, and A. R. Brimble.

The graduate diploma program has become well established in guidance and counselling, measurement, school psychology, developmental psychology, and the education of exceptional children. It seems to be filling a distinct need in these areas.

(c) *Department of Elementary Education*—W. H. Worth, Head

Considerable staff time and energy was devoted to program development during the year. The seven junior undergraduate courses offered by the department were re-organized in accordance with the revisions in the Bachelor of Education elementary route of a year ago. The number of lecture hours in each course was reduced and the content closely articulated with student teaching. In addition, three new senior undergraduate courses were developed to meet the major field requirements of the revised program. A new graduate course in the field of reading was also introduced.

Increasing emphasis upon graduate studies was apparent. Nine master's students and one doctoral student were enrolled on a full-time intramural basis during the 1963-64 academic year. During this same period another seven students completed their theses and were awarded M.Ed. degrees.

Staff members continued to be actively involved in research, in publication, and in the affairs of provincial, national, and international professional organizations.

Similar involvement was evidenced in in-service education activities for teachers and in school curriculum improvement projects.

The improved facilities and equipment of the new Education Building helped to enrich and extend the program of the department. The Speech Clinic and the Reading Center served as a training ground for an increased number of senior undergraduate and graduate students while offering consultative and clinical assistance to a larger and more varied clientele. Pupils recruited from public and separate elementary schools were brought to the campus to participate in a special music education program designed to test the efficacy of a variety of new instructional materials and methods. Other changes noted include added emphasis upon laboratory activities in science education, greater diversification in the media used in the art education courses, and more frequent use of audio-visual aids in the total instructional program.

(d) *Department of Secondary Education*—L. W. Downey, Head

The Department of Secondary Education continues to regard the provision of courses in secondary school curriculum and instruction as its main responsibility.

Program changes initiated by this Department in the fall of 1963 brought mixed reactions from the teaching profession. Now, however, after a year's trial and debate, most educators admit that specialization and depth of scholarship are important aspects of teacher preparation programs.

The initiation of the Diploma Program and the requirement that all candidates for advanced degrees spend at least one year in resident study have already had an impact upon graduate study in this Department. A year ago we had 4 resident graduate students; we now have 23.

The Department continues to assume some responsibility for the continuing education of high school teachers and leaders in the field of secondary education. One of the best examples of our attention to this function was the Conference on the Canadian High School held in the Banff School of Fine Arts in March.

In summary, the aim of the Department of Secondary Education is to improve the quality of high school education through the provision of quality pre-service and in-service education for secondary school educators.

(e) *Department of Educational Foundations*—B. E. Walker, Head

Since its organization three years ago the Department of Educational Foundations has continued to offer to large numbers of students basic courses in the fields of philosophy, history and sociology of education.

During the year just completed the Department expanded and improved its program at the senior and graduate level. New courses dealing with the history of education in Canada and United States are in preparation. In the organization of programs for the increasing number of graduate students the Department has obtained active participation of related departments in the Faculty of Arts.

The preparation of the massive research report on the Métis in Alberta society, which was released late in 1963, was made possible by collaboration of staff from several different University departments and disciplines. Dr. B. Y. Card of this Department was one of the main contributors to this outstanding study.

(f) *Department of Industrial and Vocational Education*—H. R. Ziel, Head

The Department developed a program leading to the Bachelor of Education in Industrial Arts Education designed to make the world of business and industry understandable and meaningful to youth. It acquaints students with those technologies that are evident in virtually all organizations, for example, electricity-electronics, computer, mechanical, power, power transmission, graphic communications, materials and processes testing. The program was offered to a total of twenty-two candidates during the year. Two were holders of approved degrees.

The Department developed and received approval for two Master of Education degree programs, one in Industrial Arts Education and another in Vocational Education. In addition, approval was received for the offering of three graduate diplomas programs: in Industrial Arts Education, Vocational Education and Vocational Guidance. Applicants to these diplomas programs must have at least one approved university degree, a permanent professional certificate and in the case of

Vocational Education and Vocational Guidance extensive work experience in the fields of business and industry. Fifteen candidates qualified for admission to the Vocational Guidance Diploma program for the 1963-64 session.

In its second year of operation the Bachelor of Education in Vocational Education degree program had an enrolment of sixty candidates. Once again all held qualifications as journeymen in their respective trades or equivalent and had had extensive practical experience. Some of the candidates were already holders of approved degrees and all were fully matriculated students.

We have offered summer session and evening credit courses and will again offer summer session courses at both the graduate and undergraduate levels.

The Department is currently working with the Northern Alberta Institute of Technology to establish two new industrial arts laboratories which will be ready for occupancy September 1.

This Department is organizing and will conduct a conference from June 1 to 12 to determine the implications of the contemporary world of work for decision making in vocational-technical education.

PART III

Reports of Special and Supporting Services

(a) Education Clinic—W. B. Dockrell, Co-ordinator

The extended facilities on the clinical services floor of the new Education Building have permitted the extension of the clinical training programs both in number of students and in scope. A new counsellor-training program was inaugurated in co-operation with the Department of Vocational Education. The enrolments in the reading clinic, the speech program and the education clinic were also increased. The new facilities made substantial improvements in all of these programs. Interviews of student clinicians were conducted in the privacy of the interview cubicles, but were recorded for later examination by the supervising clinicians. The reading clinic was able to make use of the same supervisory facilities and also the new equipment in the machine room. The speech program was greatly enhanced by the soundproof booth as well as the interviewing cubicles. The observation rooms were used extensively both for training clinicians and also to provide observation opportunities for parents of the exceptional children in attendance at the clinic. The research potential of these new facilities is just beginning to be exploited but we anticipate that in future years there will be a growing body of research emanating from all of the clinical programs.

(b) Student Teaching—S. A. Earl, Supervisor

During the 1963-64 session, the Division of Student Teaching served some 970 student teachers in the elementary, secondary, vocational education and industrial arts programs. The average time spent by students in observation, teaching and other classroom activities was twenty-one days, spread over two sessions. The public and separate schools of Edmonton, Jasper Place, and Strathcona County were used. Each student was supervised by one of the some 90 faculty consultants and by two or more of some 500 co-operating teachers in elementary, junior, senior high and vocational classrooms. These consultants and co-operating teachers provided for situations in which the student could develop initially his teaching skill, attempt to translate theory into practice, and become somewhat aware of the professional role of the teacher.

The Division of Student Teaching, through careful consideration of the administration of the program, through an increasing number of research activities, and through a continuing delineation of the principles and practices of the concept of student teaching, from year to year, is refining to a significant degree the program of student teaching.

(c) Audio-visual Media Centre—J. O. Fritz, Co-ordinator

The Audio-visual Media Centre in the Faculty of Education has been established to provide equipment and materials services to faculty members, instruction in the use of audio-visual media and other learning devices in teaching, consultation and leadership in the exploratory use of newer communications media and technologies

in teacher education, and the conduct of research in the use of these media in instruction.

The Centre and its staff provide the faculty with delivery and, on occasion, projection services involving all types of audio-visual equipment. Faculty members can also readily prepare inexpensive materials, such as overhead transparencies, and schedule laboratory sessions in equipment operation for themselves and their classes. In addition, the co-ordinator provides special lecture-demonstrations to education classes.

Consultant and leadership services to the Faculty acquired particular importance this year with the introduction of a comprehensive closed-circuit television system to facilitate the direct observation and study of classroom activity. Such new developments constantly present unique opportunities to further research in the experimental use of communications media in instruction. The Co-ordinator of the Centre is currently pursuing four such research projects.

Report of Dean H. S. Baker of the Faculty of Education, Calgary

I have the honor to present this report of the activities of the Faculty of Education, Calgary, for 1963-64. Additional information concerning the Faculty of Education is included in the report of Dr. T. G. Finn, Director of the Summer Session and the Evening Credit Program.

I. GENERAL

Registration

A total of 915 students were enrolled in the full-time intramural undergraduate program and the program for holders of approved degrees. In addition, 193 were registered as partial daytime students. Thirty-eight students were enrolled in Diploma programs.

One thousand, twenty-one students were enrolled in the 1963 summer session, and 635 in the Evening Credit Program for 1963-64. Most of these were registered in the Faculty of Education.

Degrees and Certificates

Degrees were conferred during the year as follows:

	October 1963	May 1964	Total
B.Ed.	68	79	147
B.Ed. in Industrial Arts	6	4	10
	<hr/> 74	<hr/> 83	<hr/> 157

Certificates were recommended as follows:

	October 1963	May 1964	Total
Jr. E	24	4	28
Standard E	57	117	174
Standard S	51	195	246
Professional	75	183	258
	<hr/> 207	<hr/> 499	<hr/> 706

Organization

Effective July 1, 1963, the following Departments were established within the Faculty: Educational Administration and Student Teaching, Educational Foundations, Educational Psychology, Curriculum and Instruction, Fine Arts/Education. A Head was appointed for each Department and, in addition for Fine Arts, an administrative officer (Art).

Programs

Major changes were made in the elementary and secondary routes of the undergraduate programs in 1962-63 and 1963-64. The requirements for the B.Ed. program for holders of approved degrees have now been reduced to bring this program into line with the revised undergraduate program. There will be no further intake in the Industrial Arts program, which is now under the jurisdiction of the Department of Industrial and Vocational Education in Edmonton.

Three Departments are now authorized to offer M.Ed. programs: Curriculum and Instruction, Education Administration and Student Teaching, Educational Psychology.

In September, with the co-operation of CFCN-TV, the Faculty offered a pioneer course in teacher education by television. (See Part II—report of the Department of Curriculum and Instruction.)

Staff

The following Departments Heads were appointed, effective July 1, 1963: Dr. R. N. Anderson (Educational Foundations), Dr. J. E. Cheal (Educational Administration and Student Teaching), Dr. F. E. Churchley (Fine Arts/Education), Dr. S. A. Lindstedt (Curriculum and Instruction), Dr. J. G. Woodsworth (Educational Psychology). At the same time Miss H. Stadelbauer was appointed administrative officer (Art) in the Department of Fine Arts/Education.

Assistant Professor G. L'Abbe (Curriculum and Instruction) joined our staff in April, 1963.

In September, 1963, the following joined the staff: Assistant Professor S. S. Blank (Educational Psychology), Associate Professor J. E. Cheal (Educational Administration), Associate Professor A. A. Gibb (Curriculum and Instruction), Visiting Assistant Professor B. Hutchinson (Educational Foundations), Associate Professor R. A. Lambert (Educational Psychology), Assistant Professor R. F. Lawson (Educational Foundations), Assistant Professor E. L. Pitt* (Dean's office).

Dr. W. D. McDougall and Miss P. J. Reid assisted the Department of Curriculum and Instruction, and Mr. G. Hollinshead assisted in Student Teaching.

In September, 1963, Mr. E. M. Dodd returned from a year's leave of absence in pursuit of graduate studies at the Ontario College of Education, and Miss E. M. King from a similar leave of absence at the State University of Iowa. Miss M. Beaton left for a year's leave of absence to pursue graduate studies at Northwestern University.

Assistant Professor D. F. Swift was awarded the Ph.D. degree from the University of Liverpool in July, 1963. Associate Professor R. N. Anderson was awarded the Ph.D. degree from the University of Minnesota in February, 1963. Associate Professor E. M. King was awarded the Ph.D. degree from the State University of Iowa in August, 1963.

Effective April 1, 1964, Dr. A. A. Gibb was appointed to the rank of Professor. The following were appointed to the rank of Associate Professor: Dr. A. F. Brown, Dr. P. J. Eccles, Dr. S. G. Finn and Dr. W. E. Gandy.

Professional and Other Activities

As indicated in the Departmental reports, all members of staff actively served the Teachers' Association, the Department of Education, and other professional and community groups in a variety of ways: as consultants, as speakers, as committee members, and as participants. Most members were active at regional and national levels, and many at international levels as well.

II. DEPARTMENTAL REPORTS

Educational Administration and Student Teaching—Dr. J. E. Cheal, Head

During this first year of operation the Department concentrated on laying the groundwork for future developments in three major areas: student teaching and internships, graduate programs in educational administration, and professional services to the field. Members of the department shared with other members of the faculty the responsibility of carrying out a series of five institutes for supervising teachers engaged in the student teaching program, and seminars in Calgary and Lethbridge in connection with internship programs. These activities served the three-fold purpose of improving the programs, providing a form of in-service education for teachers, and strengthening relationships between the Faculty of Education and the field.

*Resigned because of ill health January, 1964.

The first step in offering graduate work was taken during the year when two half courses on the diploma program were presented in the Evening Credit Division. Eleven students availed themselves of this opportunity. In January approval was granted by General Faculty Council for the offering of the M.Ed. program in Educational Administration in Calgary.

Opportunities for providing services and strengthening relations with practicing administrators in the field were presented at all levels. Reference has already been made to activities relating to teachers. Through the graduate program, and through participating in activities of the Council on School Administration, staff members have had opportunity to work with principals in both the Calgary and Medicine Hat districts. Invitations to address the Annual Conference of Provincial School Superintendents and to participate on the Accreditation Committees for the Calgary Public School system have strengthened relationships with superintendents and other central office and departmental personnel in Alberta. Service as a group consultant at the C.E.A. Short Course held in Banff gave the chairman of the department an opportunity to work with superintendents and inspectors of schools from all ten provinces. During the year staff members have also enjoyed associations with members of local school boards, the Home and School Association, and the Calgary Chamber of Commerce. The presentation of a paper on "The Role of Educational Administration in Our Changing Society" to group sessions of the Swift Current City Teachers' convention resulted in worthwhile discussions with school board members, superintendents, principals and teachers in that Saskatchewan center.

Professional contacts were maintained and enlarged during the year through contributions to educational journals, and through publication of a major study of Canada's provincial school systems. Dr. Brown serves as editor of the Bulletin of the Council on School Administration.

Educational Foundations—Dr. R. N. Anderson, Head

The Department of Educational Foundations is staffed in such a manner as to provide distinct and specialized emphases on the history of education, the philosophy of education, the sociology of education and comparative education. In addition to individual faculty specialization, all members of the Department participate as a team in the presentation of the introductory Foundations course. A total of four and one-half undergraduate courses, and four graduate courses were developed by the Department and have been approved by General Faculty Council. During the academic year 1963-64 four students have been enrolled in a Graduate Diploma program in Educational Foundations.

All members of this Department have assisted in the supervision of the student-teaching program, have served as speakers at teacher conventions and Home and School associations, and participated on committees of the Alberta Teachers' Association. Two members of the Department have served on thesis committees of M.A. candidates in Arts and Science.

During the academic year 1963-64 members of this Department have attended the following conferences: Comparative Education Association (Chicago), American Educational Research Association (Chicago), Canadian Association of Professors of Education (Quebec), The American Sociological Association (Los Angeles), Western Canada Conference on the Foundations of Education (Banff), and the Northwest Philosophy of Education Association (Vancouver).

On the initiative of this Department and in collaboration with the Edmonton Department of Educational Foundations, a Western Canadian Conference on the Foundations of Education was planned and sponsored. This conference involved persons in the history, philosophy and sociology of education and comparative education from the four western Canadian provinces as well as the north-central and north-western United States.

One new appointment has been made to this Department in the person of Professor R. L. Schnell, who will offer courses in the history of education commencing September 1964.

Each member of the Department has at least one research project currently under way.

Educational Psychology—Dr. J. G. Woodsworth, Head

For the newly-constituted Department of Educational Psychology, 1963-64 was a year of orientation to its new status and responsibilities. Monthly staff meetings were scheduled to clarify budgetary matters, discuss examination policy (especially with respect to sectioned courses), and provide guide-lines for future development in the Department. Considerable thought was given to space-needs in the years ahead, and a plan was drawn up and submitted to the Faculty Housing Committee.

A full complement of undergraduate courses was offered during the year by the seven professors of this Department. In addition, one graduate course was given in the late afternoon for five enrolled Calgary teachers. This course initiated a new Diploma in Educational Psychology program. The January, 1964, meeting of General Faculty Council authorized the Department to offer the M.Ed. degree in Educational Psychology—a program which will be launched in 1964-65.

Considerable equipment and supplies were added to the Department's professional repertory. These assets will add considerably to both teaching and research potential in the Department. Some of the more expensive items of equipment were ordered in preparation for the offering next year of Ed. Psy. 532—a newly-created Experimental Educational Psychology course.

Library resources of the Department continued to grow. Considerable emphasis was put on the building up of back issues of periodicals, in anticipation both of graduate offerings and increased research activities on the part of staff.

Curriculum and Instruction—Dr. S. A. Lindstedt, Head

This Department has a staff of ten full-time and two part-time appointments. In addition, Dr. T. G. Finn, Director of Evening Credit Program and of Summer Session, gives part-time service; Dr. W. D. McDougall, Professor Emeritus, teaches one course; Dean Baker is in charge of Ed. CI 580.

The Department offers 20 basic CI courses in the Standard Elementary and Secondary routes and in the B.Ed.-after-first-degree pattern. It also offers seven senior education options and one graduate course. All staff members serve as chairmen of Student Teaching committees. During the year, Ed. CI 328, a course in the teaching of arithmetic, was presented by television to a class of 140 with Dr. A. A. Gibb and Dr. S. A. Lindstedt as instructors. This project—the first of its kind in teacher education in Canada—has been very well received.

During the year, authority was granted to this Department to offer the M.Ed. program, and plans are going forward to implement this work. The Graduate Diploma program was initiated in September, 1963.

The Department continues its interest in the curricular programs of the schools of Alberta. Many staff members participate actively on curriculum sub-committees of the Department of Education; many have attended teachers' conventions and institutes as speakers and consultants; a number are on the executive of A.T.A. specialist councils; and Miss L'Abbe is successfully promoting an elementary French program for the Calgary School System. Dr. E. King is doing research with pre-school children and kindergarten teachers.

Mr. Chorny serves as editor of the A.T.A. specialist council publication, *The English Teacher*; Dr. Norris, as editor of the publication of the *Science Council of Alberta Teachers*.

Fine Arts/Education—Dr. F. E. Churchley, Head

Enrolment in the Department of Fine Arts and Fine Arts/Education continued to increase in the 1963-64 academic year. Although there were no new appointments to the full-time teaching staff, extra part-time sessional instructors were engaged to accommodate the unexpected increase in the B.Mus program. Mr. E. Dodd returned to the Art Division after a year of study at the University of Toronto.

Faculty members have contributed to the community through art exhibitions, musical performances and through active participation in such professional organizations as the Canadian Society for Education through Art, Calgary Allied Arts Council, Canadian Music Educators Association and the A.T.A. Fine Arts Council. A Visual Arts Society has been formed by students and staff. It has promoted

interest in the arts by exhibitions and film showings. The Western Canada Art Circuit exhibitions have been on view regularly and a special art exhibit was organized for the library opening. The Music Society presented programs for the Calgary Musical Club, the annual March concert and the "Maytime in Alberta" tour in May.

Report of Dean R. M. Hardy of the Faculty of Engineering

GENERAL

The events of most general significance in the Faculty of Engineering during the 1963-64 session were concerned with the long-term plans for accommodation both in Calgary and Edmonton, and the operation of the new Division of Engineering in Calgary.

At the University in Calgary, the new Division of Engineering functioned for the first time with Dr. A. M. Neville as Chairman. This new administrative organization involved expansion into graduate work but with instruction at the undergraduate level still confined to the first two years. The new organization functioned extremely well during this first session, and it appears to have done much to meet the objective of raising the calibre of engineering work at the University in Calgary to a proper professional level.

The new Structural Engineering Laboratory was opened on the Edmonton campus in the fall of 1963, and it forms a valuable addition to the facilities of the Civil Engineering Department. It will strengthen the work of the department in the structural engineering field, particularly at the graduate level.

Construction was started on the first unit of the Engineering Complex in Calgary in the fall of 1963, and planning was commenced for the second unit in anticipation that it would be ready for occupancy in the fall of 1967 at which time the general overall plan is that third year courses, in at least some areas of specialization, would be commenced at the University in Calgary at that time.

General planning was commenced on the proposed Engineering Complex on the Edmonton campus and approval was given for detailed planning of the first unit in the complex to house Chemical and Petroleum Engineering in anticipation that this department could vacate the Medical Building as well as certain space in the Engineering Building to permit medical science departments to expand into these areas.

ACADEMIC PROGRAM

Curriculum

The major problem at the undergraduate level given attention during the 1963-64 session was a reappraisal of the new first and second year curricula that were initiated in the session 1961-62. The changes initiated in these new curricula upgraded the basic science content. Based on performance of the students, the first year curriculum appears to have met the objectives of the Faculty during the two sessions, 1961-62 and 1962-63, during which it has been in effect. However, the performance of the class in the second year during the session, 1962-63, left considerable to be desired. Based on statistical results, there was considerable evidence that the program was too heavy for the average student to properly master.

A great deal of attention has been given this problem by the Faculty of Engineering, and following a review of the first term test results for January 1964, it was recommended that a slight reduction in the weight of the second year curriculum should be made for the session, 1964-65. This has been adopted on a temporary basis and, in the meantime, studies are continuing on the whole problem of a proper curriculum for the second year.

The statistics of performance of engineering students in the undergraduate courses is somewhat disquieting. A survey of the graduating class records in the spring of 1964 indicated that only about one-third of the graduating class had completed the course in the normal four-year period, even utilizing their supplemental privileges. This situation provides grounds for the belief of many of the Faculty that the present undergraduate programs in engineering are too heavy for the average student. One solution for this problem that has been given detailed

attention by the Faculty during the past session has been the advisability of reverting to the semester system, if not in the whole of the University, then in the Faculty of Engineering.

This situation, of course, is not peculiar to the Faculty of Engineering at the University of Alberta. It is a problem that exists and is being given serious attention at many institutions on this continent, and it has led to the initiation of a new study entitled "Goals of Engineering Education" which has been instituted by the American Society for Engineering Education. The study is to be quite comprehensive in nature and is financed to the extent of about \$300,000. The Faculty has instituted steps to take an active part in this study.

Graduate Work

At the graduate level, graduate and research programs have been extended in all of the engineering departments during the past year. The total number of graduate students enrolled for programs in departments in the Engineering Faculty amounted to about 16% of the undergraduate total. This percentage represented a marked increase from the situation in Engineering even five years ago and is in line with the trend that has been advocated by many responsible sources in Canada for an increase in work at the graduate level in engineering faculties at the Canadian universities. Five graduate students were accommodated by the new Division of Engineering at the University in Calgary.

Research

Research projects undertaken during the session, 1963-64 in the engineering departments are listed in Table I, along with the names of the supervisor, student assistants and sources of financial support for both the project and student assistants. This tabulation reflects the trend over the past few years for gradually increasing research activities in all of the engineering departments.

ACADEMIC STAFF

Appointments

The following new appointments, effective during the 1963-64 session, were made:

Calgary

- Loov, R. E.—Assistant Professor of Civil Engineering (Effective September 1, 1963)
- Neville, A. M.—Chairman, Division of Engineering and Professor of Civil Engineering (Effective July 1, 1963)
- Pashniak, D. W.—Assistant Professor of Mechanical Engineering (Effective September 1, 1963)
- Govier, G. W.—Professor of Chemical Engineering—part-time (Effective July 1, 1963)

Edmonton

- El-Kharadly, M. M. Z.—Assistant Professor of Electrical Engineering (Effective September 1, 1963)
- Nichols, S. T.—Research Assistant in Electrical Engineering (Effective September 1, 1963)
- Below, D. G.—Assistant Professor of Mechanical Engineering (Effective September 1, 1963)

Resignations

The following resignations were received, effective during the 1963-64 session.

Edmonton

- Phillips, R. E.—Associate Professor of Electrical Engineering (Effective November 1, 1963, to become Superintendent of Buildings, and part-time lecturer in Electrical Engineering)
- Duby, J.—Associate Professor of Mechanical Engineering (Effective March 31, 1964—On leave from March 31, 1963)
- Parr, J. G.—Professor of Metallurgy (Effective June 30, 1964, appointed Dean of Engineering, University of Windsor)

Continuing On Leave

Calgary

- Doige, A. G.—Assistant Professor of Mechanical Engineering (Purdue University)
Glockner, Peter—Associate Professor of Civil Engineering (University of Michigan)
McArthur, H. R.—Associate Professor of Mechanical Engineering (Singapore Teachers' College in Malaysia under Colombo Plan)

Edmonton

- Adams, P. F. G.—Assistant Professor of Civil Engineering (Lehigh University, Pennsylvania)
Baron, M. J.—Assistant Professor of Civil Engineering (Yaba College of Technology, Nigeria, auspices of Canada Foreign Aid Program)
Kelly, D. H.—Associate Professor of Electrical Engineering (University of Illinois)
Eshel, A.—Assistant Professor of Mechanical Engineering (Columbia University)

Returned From Leave

Edmonton

- Sinclair, S. R.—Professor and Head of Civil Engineering (August 31, 1963) (Year's sabbatical leave)
Brooker, E. W.—Associate Professor of Civil Engineering (December 31, 1963) (University of Illinois—received Ph.D.)
Rokkiewicz, C. M.—Associate Professor of Mechanical Engineering (August 31, 1963) (University of Illinois)

The regular full-time academic staff of the Faculty of Engineering during the 1963-64 session numbered 69* including 9 in the Department of Chemical and Petroleum Engineering; 27 (including the Associate Dean) in the Department of Civil Engineering (5 of whom were at Calgary); 11 in the Department of Electrical Engineering; 15 in the Department of Mechanical Engineering (3 of whom were at Calgary); 5 in the Department of Mining and Metallurgy, and the Dean of the Faculty. Two part-time professors, four sessional instructors, and 56 part-time graduate teaching assistants aided in the teaching duties of the Faculty.

Participation in Professional Activities

Representatives of all departments in the Faculty were active in leading Engineering Technical Societies and Professional Engineering bodies. Dr. G. Ford was President of the Association of Professional Engineers of Alberta for the year 1963-64. The Dean of the Faculty was Chairman of the Annual Meeting of the Deans of Engineering Faculties of Canadian Universities held under the auspices of the Engineering Institute of Canada at Banff in May 1964. Various members of the Faculty attended and were active at annual and regional meetings of the Association of Professional Engineers of Alberta, The Engineering Institute of Canada, The Chemical Institute of Canada, The Canadian Institute of Mining and Metallurgy, The American Concrete Institute, Canadian Standards Association, American Society for Engineering Education, American Society of Civil Engineers, American Society of Mechanical Engineers, Association of Alberta Land Surveyors, Canadian Institute of Surveying, American Institute of Chemical Engineers, American Institute of Mining Engineering, American Chemical Society, Highway Research, Board of the American Research Council, Canadian Good Roads Association, Canadian Technical Asphalt Association, International Society of Soil Mechanics and Foundation Engineering, Institute of Traffic Engineers, International Association for Hydraulic Research, American Waterworks Association, Western Canada Water and Sewage Conference, Royal Society for Health, American Society for Testing Materials, American Geophysical Union, International Electrochemical Commission, International Congress on Large Dams, International Congress on Large Electrical Systems, Institute of Electrical and Electronic Engineers, Society of Experimental Stress Analysis, Institution of Mechanical Engineers, Institution of Civil Engineers, American Society of Heating, Ventilating and Air Conditioning Engineers, American Society of Metals, National Association of Corrosion Engineers, and others.

*Including seven on leave of absence, three research assistants, and one research associate.

Extension Activities

The Faculty was conscious of a growing trend on this continent to make refresher and graduate courses available to recent engineering graduates. A good deal of discussion took place as to the proper function of the Faculty in such activities, and the general feeling is that our efforts should be expanded into these areas. In line with this thinking several graduate courses in Calgary and Edmonton were scheduled to permit practicing engineers to attend with a minimum of disturbance to their regular duties, and the response was reasonably good.

Extension courses were provided in co-operation with the Extension Department and Industry in the fields of Petroleum Reservoir Engineering, Petroleum Engineering, American Concrete Institute Code, Semiconductors and Transistors, Prospecting, and Asphalt Technology.

Several members of the Faculty were active in career day activities in the Alberta high schools, and a number of radio talks and TV programs were given.

Publications

The scientific and professional publications by members of the Faculty during the 1963-64 session are listed in Table II.

Registration Statistics

The distribution of the undergraduate registration through the years of the programs and among the branches of engineering for the 1963-64 session was as follows:

Branch	First Year	Second Year	Third Year	Fourth Year
Chemical .....	.....	.....	36	41
Civil .....	.....	.....	33	53
Electrical .....	.....	.....	52	53
Engineering Physics .....	.....	.....	8	3
Mechanical .....	.....	.....	48	52
Metallurgical .....	.....	.....	12	6
Mining .....	.....	.....	.....	2
Sub-Total—Edmonton	213	146	189	210
Calgary	116	73	.....	.....
TOTAL	329	219	189	210

The total undergraduate registration was 189 in Calgary, 758 in Edmonton and 947 for the Faculty. A total of 114 engineering students were registered in M.Sc. and Ph.D. programs in the Faculty of Graduate Studies. These were distributed as follows:

Branch	M.Sc.	Ph.D.	Total
Chemical	12	10	22
Civil	34	6	40
Electrical	20	0	20
Mechanical	5	1	6
Metallurgical	12	5	17
Mining	0	0	0
Petroleum	9	0	9
TOTAL .....	.....	.....	114

TABLE I
Research Activities of Staff of the Faculty of Engineering
July 1, 1963-June 30, 1964

Supervisor	Project	Financial Support for Project	Student	Financial Support for Student
<i>Department of Chemical and Petroleum Engineering</i>				
I. G. Dalla Lana	Dehydrogenation of Alcohol	U of A NRC	K. Vasudeva	U. of A. NRC
I. G. Dalla Lana	Study of Gas Solids in Vertical Pipe	U of A	S. E. Christiansen	
I. G. Dalla Lana	Kinetics of Sulphur Recovery	U of A	A. E. Cormode	U. of A.
P. M. Dranchuk	Flow of Gases Through Porous Media	Pet. Prod.	S. Sadiq	RCA
D. L. Flock	Flow Through Heterogeneous Systems	RCA	R. A. Mackett	U. of A. NRC
D. L. Flock	Effect of Wettability of Porous Media on Oil Recovery by Water Flood	Pet. Prod.	I. L. Budhiraja	Pet. Prod. NRC
D. L. Flock	High Viscosity Crude Oil Displacement in a Long Core Using Native Brine	Pet. Ind.	H. N. Collins	Heavy Crude Oil Res.
D. L. Flock	Recovery of Heavy Crude with Steam Injection	Pet. Ind.	M. Fazil	RCA
D. L. Flock	Unsteady State Two-Phase Flow Through Porous Media	Pet. Ind.	L. McClennon	U. of A. Heavy Crude
D. L. Flock	Effect of Sodium Hydroxide on Water Flood Recovery Using Heavy Crude	Pet. Ind.	G. R. Scott	RCA
D. L. Flock	Steam Injection in Reservoirs	Pet. Ind.	M. A. Leal	ICETEX
L. U. Lilleht	The Co-Current Stratified Flow of Two Immiscible Liquids in a Rectangular Conduit	NRC	M. E. Charles	NRC
L. U. Lilleht	Turbulent Velocity Distribution in a Rectangular Conduit	NRC	V. T. Sinha	U. of A. NRC
L. U. Lilleht	Study of Two-Phase Flow in Rectangular Channels	NRC	T. D. M. Strashok	Scholarship
W. Nader	Investigation of Wetting Characteristics of Synthetic Porous Media	NRC	A. K. Singhal	U. of A. NRC
F. D. Otto	Differential Thermal Analysis of Polymers	U of A	J. J. Sparling	U. of A.
F. D. Otto	Liquid Extraction of Packed Beds	NRC	G. P. Jain	U. of A. NRC
F. D. Otto	Mass Transfer Effects in Solid-Liquid Reaction Systems	U of A NRC	D. B. Gandhi	U. of A. NRC

TABLE I—Continued

Supervisor	Project	Financial Support for Project	Student	Financial Support for Student
D. Quon	Partial Oxidation of Butane	U of A	N. E. Anderson	U. of A.
D. Quon	Analysis of Reactors	NRC	P. K. Leung	NRC
		U of A		U. of A.
D. Quon	Analysis of Heat Transfer in Reactors	NRC	C. R. Darsi	NRC
D. Quon	Unsteady State Conduction in Oil Reservoirs	U of A	A. S. Rao	Commonwealth Scholarship
R. A. Ritter	The Rheological Behavior of a Thixotropic Model	U of A	D. R. Prowse	None
R. A. Ritter	Design of a Viscometer for Time-Dependent Fluids	NRC	R. Auld	U. of A.
R. A. Ritter	The Study of Process Dynamics by Analog Simulation	NRC	W. Svrcek	NRC
R. A. Ritter	Development of a Mathematical Model for Multi-Effect Evaporation	U of A	H. Andre	NRC
R. A. Ritter	Development of a Three Mode Controller	NRC	N. Arrison	NRC and Scholarship
D. B. Robinson	Phase Behavior in Hydrocarbon—Non Hydrocarbon Systems	NRC	A. Saxena	Imp. Oil
D. B. Robinson	Hydrates in Hydrocarbons Containing Hydrogen Sulphide	NRC	J. Hutton	NRC
D. B. Robinson	Hydrates in the Propane-Nitrogen System	NRC	B. Mehta	NRC
D. B. Robinson	Volumetric Behavior of the Ethane-Hydrogen Sulphide System	NRC	K. Tiwari	Scholarship
<i>Department of Civil Engineering</i>				
K. O. Anderson	Cracking of Asphalt Pavements	None	A. F. MacRury	None
K. O. Anderson	Evaluation of Flexible Pavement Overlays	None	R. W. Culley	None
K. O. Anderson	Cyclic Triaxial Loading of Stabilized Soil Mixtures	NRC	S. H. Mir	RCA
K. O. Anderson	Transverse Cracking of Bituminous Pavements	RCA	U. Sharan	None
R. W. Ansley	Hydraulic Research	NRC	M. P. duPlessis	NRC
R. W. Ansley	Construction of Gamma Ray Density Meter	NRC	M. P. duPlessis	NRC
T. Blench (in association with P. H. Bouthillier)	Hydraulic Research at U. of A.	NRC	four below:	
J. B. Nuttall		RCA	N. Bobey	RCA
A. W. Peterson		NRC	M. D. Chawla	Comm. Fel.
J. P. Verschuren)		NRC	B. Harvey	None
			A. S. Qureshi	NRC

E. W. Brooker (in association with S. Thomson, R. M. Hardy, S. R. Sinclair)	Engineering and Geological Aspects of Upper Cre- taceous Deposits in Western Canada:			
E. L. Fowler	1. Field Instrumentation in Applied Soil Mechanics	NRC	D. A. Lindberg	NRC
E. L. Fowler	2. The Physical Properties of Bearpaw Shale	NRC	G. Hollingshead	NRC
E. L. Fowler	Durability of Air-entrained Concrete as Related to Its Air-Void Parameters	NRC	None	None
E. L. Fowler	Some Physical Properties of Pneumatically Placed Concrete	None	C. N. Ellert	None
E. L. Fowler	A Study of Concrete Freeze-Thaw Durability and Air-Void Parameters	None	F. Williamson	U. of A. Bursary
E. L. Fowler	Compaction Control in Medium and Highly Plastic Clays	None	H. K. Walker	None
J. Longworth	The Effect of Delamination on the Shear Strength of Glulam Beams	DDF	J. M. Strong	DDF
J. Longworth	Continuous Prestressed Concrete Beams	None	H. T. Butchart	None
J. Longworth	Frame Stability	None	W. J. Gregg	None
J. Longworth	Frame Stability	None	C. Harrold	U. of A. Scholarship
J. Longworth	Frame Stability	None	A. D. Turnbull	None
J. G. MacGregor	Eccentrically Loaded Concrete Columns	Univ. Grant	S. L. Barter	None
J. G. MacGregor	Reinforced Concrete Columns in Frames	None	R. F. Manuel	Canada Council
J. G. MacGregor	Shear Strength of Continuous Reinforced Concrete Beams	NRC	E. M. Morrison	NRC
D. W. Murray	Inelastic Behaviour of Composite Sections of Steel and Concrete	NRC	D. W. Ferrier	NRC
J. B. Nuttall	Study of the Effects of Ice on Civil Engineering Structures	NRC	None	None
J. B. Nuttall	Study of Transient Flow in Pipes	NRC	None	None
A. W. Peterson	Sediment Basin Design Allowing for Turbulence	NRC	None	None
W. W. Preston	Creep of Plastic Pipe Carrying Liquids	None	None	None
S. H. Simmonds	Design of Graphic Models and of Programmed In- struction for Graphics	None	None	None
	Moments in Cantilevered Slabs	None	M. Vollan	None

TABLE I—Continued

Supervisor	Project	Financial Support for Project	Student	Financial Support for Student NRC and GTA
S. H. Simmonds	Bending Moments in Shells of Double Curvature	NRC	B. Alexander	NRC and GTA
S. R. Sinclair	Model Pile Behaviour in a Clay Soil	None	M. C. Harris	GTA
S. Thomson	Technology of Some Alberta Soil Series	RCA	M. R. Hausmann	RCA and GTA
S. Thomson	Comparison of Soil Suction and One-Dimensional Consolidation Characteristics of a Highly Plastic Clay	NRC	D. G. Fredlund	GTA
S. Thomson	Investigation of Lesueur Slide	NRC	W. T. Painter	NRC and GTA
S. Thomson	Physical-Chemical Phenomena and Consolidation	RCA	P. Ali	GTA
S. Thomson	Physical-Chemical Phenomena and Shear Strength	NRC	A. E. Dahlman	NRC
J. P. Verschuren	Studies of Effect of Delta Formation in a Reservoir on the River Regime	NRC	B. Harvey	None
J. P. Verschuren	Same as Above	Univ. Res. Grant	None	None
J. P. Verschuren	Salt Water Fresh Water Interface in an Aquifer	NRC	None	None
J. Warwaruk	Bond and Splitting Stresses in Concrete	Univ. Res. Grant	None	None
J. Warwaruk	Creep in Concrete (Project from M.J. Baron)	Univ. Res. Grant	None	None
J. Warwaruk	Torsion in Concrete Section	NRC	G. S. Pandit	Comm. Fel.
<i>Department of Electrical Engineering</i>				
J. A. Harle	Precision Ratio Measurements	U of A	None	None
M. M. Z. Kharadly	Millimeter Wave Plasma Diagnostics	NRC	P. H. Karvellas	None
			C. R. Carter	None
			A. E. Shankowski	U. of A.
M. M. Z. Kharadly	Electromagnetic Waves in Inhomogeneous Media	U of A	None	None
Y. J. Kingma	Digital Storage Delay Generator	U of A	J. A. Ash	Res. Assoc.
			D. F. McFarlane	None
			K. T. Thorsen	U. of A.
Y. J. Kingma	Pneumatic Analogue Computing Elements	U of A	E. L. Taylor	U. of A.
Y. J. Kingma	Transistorized Differential Amplifiers	U of A	J. H. Vaneldik	U. of A.
Y. J. Kingma	Sampled Data Load-Frequency Control Systems	U of A	E. Quinlan	U. of A.

Y. J. Kingma	Magnetic Amplifiers	U of A	None	None
Y. J. Kingma	Electronic Multiplier	U of A	J. R. Connie	U. of A.
Y. J. Kingma	Hydraulic Control Systems	U of A	D. H. Pirot	U. of A.
Y. J. Kingma	Iterative Analogue Computer Techniques	U of A	C. E. Capiack	U. of A.
Y. J. Kingma	Sample Hold Demodulator	U of A	J. A. Ash	Res. Assoc.
Y. J. Kingma	Adaptive Control Systems	U of A	S. T. Nichols	Res. Assist.
W. Sinnema	Ferrite Modulator	U of A	B. Tepper	U. of A.
W. Sinnema	Varactors	U of A	W. R. Tinga	NRC
K. A. Stromsmoe	Design of High Speed Flip Flops	U of A	None	None
<i>Department of Mechanical Engineering</i>				
K. C. Cheng	Moire Method Applied to Laterally Loaded Plates	NRC	K. R. S. Jawanda	U. of A.
K. C. Cheng	Application of Moire Method to Laminar Heat Transfer Problems in Square and Triangular Ducts	NRC	None	None
G. Ford and J. S. Kennedy	Antielastic Behaviour of Flat Plates	NRC	D. G. Bellow	U. of A.
G. Ford	A Three Dimensional Photoelastic Investigation of the Forces Acting on a Tooth	U of A	E. W. Johnson	Scholarship
J. B. Haddow	Research in Visco-plasticity	NRC	H. Luming	U. of A.
J. B. Haddow	A Theoretical and Experimental Investigation of Knoop Hardness	NRC	W. Nysetvold	U. of A.
J. B. Haddow	Penetration and Deformation of Wedges	NRC	None	None
J. B. Haddow and D. G. Bellow	Investigations into the Convergence of Modified Fourier Series Applied to Clamped Plate Problems	None	None	None
J. S. Kennedy	Instability of Low Arches	U of A	D. A. Burns	U. of A.
J. S. Kennedy	Beam Vibration with Axial Load	U of A	S. Didrikson	U. of A.
J. S. Kennedy	Analytical and Experimental Investigation of the Buckling of Light Arches	None	None	None
J. S. Kennedy	Analytical and Experimental Investigation of the Effect of Axial Load on the Natural Frequency of Vibration of Thin-Walled Open Section Members	None	None	None

TABLE I—Continued

Supervisor	Project	Financial Support for Project	Student	Financial Support for Student
G. S. H. Lock	Basic Experiments in Free Convection	NRC	None	None
D. Panar	Gas Turbine Cycle with Steam Injection	U of A	J. D. Dale	U. of A.
D. Panar	Gaseous Additives to Gasolines	None	None	None
G. W. Sadler	Solar Radiation Measurements	U of A	None	None
<i>Department of Mining and Metallurgy</i>				
J. Leja	Infrared Studies of Adsorbed Xanthates	NRC	R. V. Scooven	NRC
J. Leja	Stress Corrosion Cracking	NRC	H. E. Johnson	None
J. Leja	Corrosion Inhibition	NRC	C. Duncan	None
J. Leja	Flotation Studies	Cominco	C. Guarnaschelli	Cominco
E. O. Lilge	Dissolution of Non-Metallic Minerals	EMR	H. Siebert	None
E. O. Lilge	Performance of the Hydrocyclone	DMTS	None	None
E. O. Lilge	Production of High Purity Metal Compounds	EMR	R. Tipman	EMR
E. O. Lilge and J. Leja	Catalytic Effect of Iron in Aqueous Oxidation of Sulphides	Colombo	M. F. Islam	Colombo
E. O. Lilge	High Pressure and High Temperature Leaching Studies	EMR	None	None
E. O. Lilge and J. Leja	Hydrometallurgical Extraction of Manganese from Its Ore	Colombo	M. A. Qazi	Colombo
J. G. Parr	Transformation in Pure Cobalt	CRC	M. J. Bibby	Cominco
J. G. Parr	Rapid Heating and Phase Transformations	DRB	L. Haworth	None
J. G. Parr	Iron Manganese Martensite	DRB	D. Gomersall	None
J. G. Parr	Zirconium-Niobium Systems	AEC	A. McMullen	Alberta Phoenix
J. G. Parr	Relationships Between Debye Temperature and Hardness in Cu-Ni Alloys	DRB	D. Timbres	NRC
W. V. Youdelis	Electromagnetic Effects on Solidification Mechan- ism of Binary Alloys	NRC	J. R. Cahoon	Scholarship NRC
W. V. Youdelis	Electromagnetic Effects on the Irreversible Trans- port Processes of Alloy Solidification	NRC	D. R. Colton	NRC
W. V. Youdelis	Research on Amalgams	NRC	D. Innes	NRC

W. V. Youdelis	Directional Solidification in a Magnetic Field	NRC	R. Dorward	Cominco
T. H. Patching	Strata-Stress Studies-Outbursts of Coal and Gas	DMTS, COA	J. Riddell	DMTS
<i>Division of Engineering, Calgary</i>				
H. A. R. de Paiva	Reinforced Concrete Flat Slabs	U of A	None	None
D. J. Martin				
H. A. R. de Paiva	Shear-moment Relation in, and the Strength of, Continuous Prestressed Concrete Beams	NRC	M. Adam G. Hitchings	None
R. E. Loov				
A. M. Neville	Vertical Two-Phase Flow	NRC	None	None
G. W. Govier	Strength of Prestressed Concrete Beams with Structural Grade Reinforcement	NRC	None	None
D. W. Pashniak	Factors in Rate of Creep of Concrete	NRC	G. Bohajski M. Staunton	None
R. E. Loov				
A. M. Neville	Stress Distribution in the Throat of a Plastic Hinge	None	J. Milne	None
A. M. Neville	Use of Subtense Bar	None	None	None
W. H. Stilwell	Short Distance Telemetering of Physiological Data	None	None	None
F. W. Unger				

LIST OF ABBREVIATIONS FOR TABLE I

AEC	—Atomic Energy of Canada
COA	—Coal Operators Association of Western Canada
CRC	—Cobalt Research Center
DDF	—Dominion Department of Forestry
DMTS	—Department of Mines and Technical Surveys
DRB	—Defense Research Board
EMR	—Eldorado Mining and Refining
ICETEX	—Instituto Colombiano de Especialization Technica en el Exterior
NRC	—National Research Council
Pet. Ind.	—Petroleum Industry
Pet. Prod.	—Petroleum Production Research—sponsored jointly by Research Council of Alberta, University of Alberta, and Alberta petroleum industry
RCA	—Research Council of Alberta

Report of Dean A. G. McCalla of the Faculty of Graduate Studies

The expansion in graduate work that began after the establishment of the Faculty of Graduate Studies in 1957, continued during the past year. Again there was a sharp rise in the number of degrees awarded as is shown in Table I.

TABLE I

Graduate degrees awarded in 1956-57 and during the last four years.
(Figures in parenthesis denote programs completed at Calgary).

Degree	1956-57	1960-61	1961-62	1962-63	1963-64
Master of Arts	11	17	21	24	42(2)
Master of Education	10	28	21	39	60
Master of Science	31	68(3)	61(4)	91(4)	91(5)
Doctor of Philosophy	5	10	26	33	47(2)
Doctor of Education	0	1	1	0	0
Total	57	124	130	187	240

Graduate work at Calgary continued to increase during the year. Since this is the last report that will include Calgary figures as part of the Faculty totals, Calgary degrees and registrations are recorded in this report. The figures for degrees are included in the totals in Table I with Calgary figures in parenthesis after the totals. The only earlier graduate degree completed at Calgary was one M.Sc. degree in Physics in 1959. Thus a total of 21 programs leading to advanced degrees had been completed at Calgary up until Spring Convocation, 1964.

New graduate programs approved during the year included:

A. Edmonton

1. Program leading to the Master of Business Administration;
2. Programs leading to the Master of Education in Industrial Arts and Vocational Education;
3. Program leading to the Master of Science in Computing Science.

B. Calgary

1. Programs leading to the Master of Arts degree in Geography, Philosophy and Sociology;
2. Programs leading to the Master of Education degree in Educational Administration, Curriculum and Instruction and Educational Psychology
3. Programs leading to the Master of Science degree in Geography and in Civil, Mechanical and Chemical Engineering.
4. Program leading to the Doctor of Philosophy degree in Mathematics.

A summary of registrations is given in Tables II and III

TABLE II

Session	Total registrations for the year					Total
	1956-57	1961-62	1962-63	Edm.	Calg.	
Winter*	239	619	792	866	68	934
Summer	138	196	185			231
Evening Credit		34	62			36
Less duplicates	-43	-33	-40			-67
Total	334	806	963			1,134

*omitting special students registered in graduate medical training program

TABLE III

Registrations in the Winter Session

Degree program	1956-57	1961-62	1962-63	1963-64		Total
				Edm.	Calg.	
Master of Arts	34	94	109	152	17	169
Master of Education	70	61	69	82	0	82
Master of Science	72	203	255	273	29	302
Doctor of Philosophy	18	188	246	282	18	300
Doctor of Education			1			
Total on degree programs	194	546	680	789	64	853

Probationary and conditional	45	51	44	55	1	56
Special		50	68	69	3	69

There is no doubt that the totals for Edmonton would have been considerably higher if many departments had had more adequate space and facilities. Several departments must now cut off all applications before March 1 of the calendar year in which the students are seeking admission for September. It seems equally clear that registrations in some departments at Calgary will increase considerably during the next few years.

Last year's report referred to the special efforts being made to enable students to complete their graduate programs as promptly as possible, particularly by encouraging them to continue their studies on a full-year basis. Before 1963-64, only a small number of intercession bursaries could be awarded but during the summer of 1963 there were 61 students who held such bursaries and the number for 1964 has been increased to about 150. Another step was taken on this program with the establishment of the new Dissertation Fellowship awards for students in the final year of Ph.D. programs. These are designed to free these students from all other responsibilities so they can concentrate on their research and theses. Eleven were awarded for 1964-65.

The interest of foreign students in obtaining admission in a wide variety of departments has been increasingly evident. Records show that from September 1, 1963 until June 30, 1964 we had received inquiries from 54 different countries. Of a total of about 3500 inquiries, 840 were from Canadians and the remainder from students in other countries. The largest numbers came from the following: United States, 724; India, 645; Taiwan, 456; United Kingdom 255. Obviously we can accept only a very small proportion of these applicants. In 1963-64 we had students from 38 countries, the largest numbers coming from India (46), United States (42), Taiwan (26), and Pakistan (17). There were also a considerable number of students from the United Kingdom but since these students generally enter Canada as landed immigrants, they do not appear on our records as "foreign" students. Some of the students from other parts of the British Commonwealth are on Colombo Plan or Commonwealth Scholarships, but many departments have been able to offer some foreign students teaching or research assistantships. Two American students were awarded Woodrow Wilson Fellowships to work here. Although one of these resigned in order to accept a more valuable award, he was registered in the Faculty. Very few foreign students are able to accept admission unless financial assistance, in some form, can be obtained.

The Canadian Association of Deans and Directors of Graduate Studies, referred to last year, has changed its name to the Canadian Association of Graduate Schools. A. G. McCalla, remained on the executive as past-chairman. He was also appointed to represent the University on the Canadian Research Management Association and attended the first meeting in October, 1963.

Once again it is a pleasure to record the excellent work of Mr. T. Fostvedt, Miss Louise Peers and Miss Barbara Leah. Miss Candy Williams joined our staff last fall and has done very good work during her first year. Dr. A. W. Reeves and Mr. R. B. Wishart, as Chairman and Secretary respectively, of the Graduate Scholarship Committee have rendered valuable service.

Report of Dr. E. Empey, Director of the School of Household Economics

Enrolment

Total enrolment in the School in the winter of 1963-64 was 100 (including two graduate students and one special student.) In addition, thirteen freshmen students were enrolled in University of Alberta, Calgary, two in Lethbridge Junior College and two in Camrose Junior College. Thus, the total enrolment in Alberta was 117.

The number of students enrolled in the Faculty of Education taking courses in the School of Household Economics was 131 during this past winter, as compared with 117 in 1962-63 and 89 in 1961-62.

Twenty-one students received the bachelor's degree at convocation in May, 1964.

Staff

Although staff members have been extremely busy planning a new building and drafting a revised curriculum, they have also prepared papers and presented them at staff seminars. The seminars continue to be a valuable part of the School's activities.

Miss Corinne Greschuk joined the staff this year to teach Foods courses, and Mrs. Helen Bentley to teach the beginning Clothing course. Both women made an excellent contribution to the School.

Miss Melvina Gowda did some teaching in the School and also took courses which might one day be applied towards requirements for the Ph.D. degree. In May she took a position in the research section of the metabolic unit of the University of Alberta Hospital, working under Dr. Lionel McLeod.

Building Plans

A new building for the School is being constructed just west of the Education building, facing 114th Street. It should be ready for occupancy early in 1965. It consists of three floors above ground and one below, each floor being approximately 11,000 square feet in area. A great deal of the space in the building will be used for teaching laboratories; the bulk of the top floor is designed for research in the fields of nutrition, foods and textiles.

Academic Matters

One main activity has been the preparing of a proposed new curriculum designed to permit greater professional specialization for those students who wish it, and to permit wider and greater freedom of choice for students who wish to take a general course rather than to specialize. The proposal will be presented soon to the various councils for their consideration.

The School co-operated with the Department of Extension and the Alberta Registered Dietitians Association in presenting a refresher course for dietitians this spring. The course was designed primarily for qualified dietitians who have been full-time homemakers, but wish to re-enter the dietetics profession on either a full-time or part-time basis; it is hoped that these persons will act as consultants for small hospitals in rural areas. The programme was designed to acquaint the students with the changes and new developments that have occurred in recent years. The course was attended not only by homemakers wishing to re-enter the profession, but also by persons who are presently employed as full-time dietitians. Both groups pronounced the programme a successful one and expressed the hope that more refresher courses would be presented in the near future.

Graduate Study, Research, Published Papers

Mrs. Alberta Elcombe will soon complete work for the degree of Master of Science in Nutrition.

Dr. Renner continues her excellent research into the subjects of carbohydrate and fat metabolism; she has been using the chick as her experimental animal. A paper entitled *Metabolic Effects of Feeding Carbohydrate-Free Diets to Chicks* was presented at the Annual Meeting of the American Institute of Nutrition in Chicago in April, and at the annual meeting of the Federation of American Societies for Experimental Biology. The paper was published in the Proceedings of the latter meeting. Work in progress at the moment consists of further studies on the intermediary metabolism of the chick and includes rather detailed examination of the metabolic state of this species when fed "carbohydrate-free" diets. The work is supported by National Research Council funds.

Dr. Renner was recently invited to become a member of the American Institute of Nutrition.

The School has acquired a few pieces of textile testing equipment and as a result was able, this winter, to test some materials and assist the purchasing agent in making choices for the new residences.

Report of Dean W. F. Bowker of the Faculty of Law

The outstanding event of this season was the publication of Dr. Alex Smith's scholarly book, *The Commerce Power in the United States and Canada*—the first work ever published on this important segment of Canadian Constitutional Law.

In both countries the power to legislate on trade and commerce rests in the national legislature. In Canada the courts have circumscribed the power. In the United States the Courts have given it the widest scope. Dr. Smith's analysis shows a complete grasp of the law of both countries and his organization of the subject matter gives clarity to an intricate and difficult topic. It is a pioneer work in comparative study of the constitutional law of the two countries. Moreover it points the way to Canadian Court to learn from the American so as to give Parliament the authority it needs to deal with national problems. Written in a gracious literary style, the book has received a cordial welcome from legal scholars and political scientists and all reviews have been highly complimentary. Professor Mallory has written that the work is "indispensable to all those who would in future discuss this difficult and important subject" and "Professor Smith's book is a worthy example of the value of legal scholarship in clarifying the law".

Enrolment

The numbers have remained about the same.

Law III — 42

Law II — 33

Law I — 43

As in the past, law students were active in Student Union affairs and debating. One of them, Jean Cote has received the Viscount Bennett Scholarship and the Carswell Company Scholarship that will take him to Oxford University for further study.

Staff

This year Ivan L. Head came to the staff from the Department of External Affairs as Associate Professor. He is a promising young scholar in International Law and has already accepted invitations to important meetings in Washington and Quebec and to take part in a Workshop for Teachers of International Law at New York University in July.

Professor A. R. Thompson has continued to take a leading part in the Annual Seminar on Oil and Gas Law sponsored by the Petroleum Association which is becoming an important medium for the study and development of this branch of the law.

Associate Professor D. J. Sherbaniuk has been on leave in 1963-64 for the purpose of working in Ottawa with the Royal Commission on Taxation.

Associate Professor W. H. Angus took part in a Canadian-American Conference of Law Teachers at North Hatley, Quebec in September, 1963 on "Training for Professional Responsibility."

Dean Bowker had a part in the drafting of a number of important statutes for the Conference of Commissioners on Uniformity of Legislation; continued to advocate in writings and addresses the passage of anti-discrimination laws; and gave an address to the Toronto United Nations Association "The Declaration of Human Rights in Canada" on the 15th Anniversary of the Declaration.

Alberta Law Review

The annual issue of the Review for 1963 was of good calibre. This publication is of great value to the students who are responsible for its contents and publication and also to the profession. It is now indexed in the Index of Legal Periodicals.

Relations with the Profession

Although our relations have always been good, a new interest in the faculty is manifest, in the form of concern over quarters, library, curriculum, and legal ethics. The faculty is making an attempt to have closer association with members of the judiciary and the profession in the form of social gatherings and addresses.

Quarters

The faculty will soon move to the Rutherford Library. This will be an improvement, though not a permanent answer to our need for a building. Our reading room space is being doubled and we will now be able to make use of the substantial acquisitions of the past two years.

Curriculum and Methods

The faculty has under way a comprehensive study of curriculum and methods. The question "what is the role of a Canadian law school?" and "how can the faculty best prepare students for the profession?" require new answers from time to time. Subjects like International Law, Criminology and Control and Use of Land are becoming of more importance. In addition the teaching of methods for solving new problems as distinct from imparting of information on specific subjects must receive more attention.

Report of Dean W. C. MacKenzie of the Faculty of Medicine

It is my privilege at this time to present the Annual Report of the Faculty of Medicine for the academic year 1963-64. The year opened with a Special Convocation and Anniversary Ceremony to commemorate the 50th Year of Medical Instruction on the University of Alberta Campus. This was a most successful event. The scientific sessions of the Alberta Division of the Canadian Medical Association featured distinguished Alumni from the Medical School including the following: Dr. Lloyd D. MacLean, Professor of Surgery, McGill University and Surgeon-in-Chief, Royal Victoria Hospital; Dr. Eliot Corday, Associate Clinical Professor of Medicine, University of Southern California, Los Angeles; Dr. Foster Scott, Associate Professor of Pathology, Albany Medical College, New York; Dr. George D. Molnar, Consultant, Mayo Clinic, Rochester, Minnesota; Dr. A. D. McKenzie, Professor of Surgery, University of British Columbia; Dr. Barry Pearce, Associate Professor of Pathology, University of Michigan; Dr. Nelson Bradley, Psychiatric Services Lutheran General Hospital, Parkridge, Illinois; Dr. W. Stanley Harcroft, Director of the Research Institute Hospital for Sick Children, Toronto, and Dr. John S. Lewis, Instructor in Surgery, Cornell University Medical College.

The keynote speakers for the Anniversary Meeting were Dr. R. Gordon Douglas, Professor of Obstetrics and Gynaecology, Cornell Medical College; Dr. Rene J. Dubos, Professor of the Rockefeller Institute in New York City; Dr. Frank L. Horsfall, Jr., Director of the Sloane-Kettering Institute for Cancer Research and Dr. Peter B. Medawar, Director of the National Institute for Medical Research of Great Britain and Nobel Laureate in Physiology and Medicine in 1960. These distinguished visitors were awarded honorary L.L.D.'s at the Special Convocation held in conjunction with the Anniversary Ceremonies on Saturday, September 21st, 1963, at which time the Convocation address was delivered by Dr. Peter B. Medawar. Greetings from Medical Schools and Scientific Organizations and Societies from all over the world were presented at the time of the Convocation and it gave the University of Alberta administration particular pleasure to welcome so many of our distinguished colleagues on this occasion.

Enrolment

The total enrolment of the Faculty of Medicine at the start of the 1963 session was as follows:

M.D. Program:	
First Year	94
Second Year	62
Third Year	59
Fourth Year	55
Total	270
B.Sc., M.L.S. Program:	
First Year	26
Second Year	24

Third Year	13
Total	63
Total undergraduate students	333

Curriculum

During the academic session there were no major revisions of the curriculum for the undergraduate program in Medicine, however, very detailed study and review of the curriculum as it now stands has been carried out by the Committee on Research in Medical Education under the Chairmanship of Dr. J. A. L. Gilbert. This Committee representative of the Faculty and the profession is endeavouring to study the long term changes in the education of medical undergraduates and as a result of its deliberations we feel sure significant changes will be forthcoming in the near future.

A major revision of the Bachelor of Science in Medical Laboratory Science Program was approved by General Faculty Council and will be introduced in September of 1964. The two eighteen-week periods of summer hospital training have been consolidated into a single period of twelve months hospital instruction to be conducted at the University of Alberta Hospital under the direction and supervision of the Faculty. This will overcome the difficulties of students taking a three-year program without a definite summer holiday period and will enable the hospital clinical training portion of their program to be carried out directly under the supervision of the Faculty.

During the last year an orientation program designed to acquaint students in other faculties (particularly the Faculty of Science) proposing to enter the Faculty of Medicine with the details of the medical program, was conducted and proved to be very popular. Approximately eight-five students were present at each of the sessions held. It is proposed a similar program will be introduced to the University of Alberta Calgary Campus during 1964-65.

There would appear to be no doubt that in the third and fourth years the clinical clerkship program consisting of small-group, patient-centred, educational experience has become the very essence of clinical teaching. This small group teaching program presented by the clinical departments requires maximum utilization of, and co-operation between, the University teaching staff within the various departments and the facilities of all four University associated general hospitals. It is equally obvious that facilities are urgently needed to provide this type of small group teaching. In addition, although full use will be made of part-time clinical teachers, an increase in the number of geographic full-time appointments will be required in the clinical departments if this program is to be continued with future classes.

The graduate training program has continued to expand with an increasing number of graduate students enrolled in the basic medical sciences. In addition there has been a continued active interest in training for the various clinical specialties.

Organization and Faculty

The Faculty has suffered the loss, during the year, of Dr. Benjamin Morrow Wheeler and Dr. Frederick George Elliott both of the Department of Medicine. Dr. Wheeler returned to Edmonton after a distinguished military career to eventually assume the responsibility of the teaching program in Medicine at the Royal Alexandra Hospital and in this capacity made an excellent contribution to our undergraduate program. Quiet, competent and personable, Dr. Wheeler will be greatly missed by students and staff. Dr. Elliott, a graduate of Queen's, joined the medical teaching staff before the last war and returned to the teaching staff following the war. A good doctor, a quiet sincere teacher and a man who made friends easily, Dr. Elliott will be missed in the many spheres of community life to which he made such an excellent contribution.

Another loss suffered by the Faculty was the death of Dr. C. M. Learmonth, Medical Director of the Royal Alexandra Hospital and Instructor in Anaesthesia in

that Institution. Dr. Learmonth had made a particularly significant contribution to the Medical School in his liaison work between the faculty and one of our teaching hospitals.

The new appointments in the Faculty of Medicine were as follows: Dr. R. D. Laurenson in the Department of Anatomy; Dr. W. Paranchych in the Department of Biochemistry; Dr. J. F. Henderson in the Department of Biochemistry; Dr. A. Hampton in the Department of Biochemistry and Dr. T. Nihei also in the Department of Biochemistry; Dr. D. Fawcett in the Department of Medicine; Dr. R. Henderson in the Department of Physiology; Dr. R. Craddick in the Department of Psychiatry. Dr. J. Guild was appointed to the position of Clinical Director of Clinical Psychiatry at the Royal Alexandra Hospital.

Dr. J. Winston Duggan resigned from his position as Head of the Division of Ophthalmology of the Department of Surgery in order to enter private practice in California. The Faculty has been fortunate in the selection of Dr. T. Alastair Boyd to succeed Dr. Duggan in this important post. Dr. Boyd's contributions in the field of Medical Education both at the undergraduate and graduate levels and his research contributions in the few years he has been here have assured us that he will be an outstanding Head of the Division of Ophthalmology.

Faculty promotions during the year included: Dr. T. A. Kasper to Associate Professor, Department of Bacteriology; Dr. I. J. Payne to Associate Professor, Department of Bacteriology; Dr. B. G. Lane to Associate Professor, Department of Biochemistry; Dr. G. R. Schonbaum to Associate Professor, Department of Biochemistry; Dr. R. S. Fraser to Professor, Department of Medicine; Dr. W. A. Mahon to Associate Professor, Departments of Pharmacology and Medicine; Dr. S. S. Parlee to Assistant Clinical Professor in Obstetrics and Gynaecology; Dr. T. R. Clarke to Associate Clinical Professor, Department of Obstetrics and Gynaecology; Dr. K. A. Swallow to Associate Clinical Professor, Department of Paediatrics; Dr. R. J. Swallow to Associate Professor, Department of Pathology; Dr. G. S. Marks to Associate Professor, Department of Pharmacology; Dr. W. F. M. Hall to Assistant Clinical Professor, Department of Surgery; Dr. W. H. Lakey to Associate Professor, Department of Surgery; Dr. M. Weinlos to Clinical Professor, Department of Surgery; and Dr. H. T. G. Williams to Assistant Clinical Professor, Department of Surgery.

Continuing Medical Education

One of the most exciting and important developments in the Faculty this year has been the establishment of a Department of Continuing Medical Education under the competent direction of Dr. Samuel Kling, Assistant Clinical Professor in the Department of Surgery. In this Department Dr. Kling will aim to make it possible for each physician to use in his practice the modern medical knowledge that continually becomes available. The Department's postgraduate education programs, as a result of current advances in the basic science and clinical fields, will favourably augment and modify an adequate initial medical education.

Basic Sciences

The basic science departments have continued to provide a wide variety of teaching in each discipline and in addition each basic science department has maintained a first-class level of effective research activity.

The demand upon these departments for undergraduate teaching, graduate training and research programs has far exceeded the predictions upon which their facilities were planned. Additional laboratories are being prepared for the Departments of Physiology and Pharmacology in space vacated by the Schools of Nursing and Rehabilitation Medicine, and these will meet their space requirements for the foreseeable future. Plans are under consideration to provide additional facilities for the Departments of Anatomy and Biochemistry where the increasing numbers of undergraduate students and the rapid expansion of graduate teaching has created an acute problem with respect to laboratory space.

The increasing recognition of these departments, Anatomy, Biochemistry, Pharmacology and Physiology, is shown by the increasing number of applicants for graduate training and the contribution of their faculty to national and international organizations.

Research

Our Committee on Research, under the Chairmanship of Dr. J. W. Pearce, has continued to correlate the investigative activities of all faculty departments. The efforts of the departments in this area can be evaluated by the fact that we have been able to attract from the major granting bodies in this country the sum of \$1,156,240 which was obtained in competition with all other Medical Schools in Canada. This is indicative of the fact that the granting agencies have considerable confidence in the quality of the research work being done at the University of Alberta Medical School and needless to say this brings great satisfaction to the administration of the Faculty. The scope of the activities in the research field of our various departments have been covered adequately in departmental reports and I need do no more than say that there has been expansion in practically all areas without sacrifice of quality. On October 2nd, 3rd and 4th, 1963, the Department of Obstetrics and Gynaecology was host to a very distinguished group of visiting investigators in the field of Fetal and Uterine Physiology. This included medical scientists in this field from Ohio, Georgia, Virginia, Maryland, North Carolina and the State of Washington. This in itself would be evidence that Dr. Paul, in his short term as Head of this department, has made definite strides to establish it as one of the important investigative centres on the Continent. Further evidence of this fact is the return of Dr. David Reid from Western Reserve University and Dr. Richard Day from the University of Uruguay, Montevideo, Uruguay, to establish a program of uterine recording which is well under way.

In the first week of June, 1964, the Departments of Pharmacology and Biochemistry and the Division of Neurology will present the first University of Alberta Symposium on Muscle Structure and Function. The outstanding contributors to this Symposium coming from all parts of the world makes it obvious that the workers in this field in our Medical School are not only anxious to have distinguished scientists assembled to share knowledge in this field but the work they are carrying on must be worth coming to see.

Space and Facilities

At the time of the report of our Faculty last year the Board of Governors of the University had agreed, in principle, to the provision of a Clinical Teaching Building and it was to be provided through renovation of the old Education Building. Renovation of the old Education Building proved to be too expensive to provide the facilities so necessary for our third and fourth year students. The increase in student enrolment in First year medicine of twenty-five percent last year and a further increase expected this year, means that in the fall of 1965 we are going to be faced with clinical classes such as we have never seen before at the University of Alberta Medical School. The complete absence of any facilities provided by the University for these two final years makes it obvious that our need is urgent and that the currently proposed Clinical Teaching and Research Building in close proximity to the University Hospital is a mandatory requirement. Even if we were to proceed at the optimum pace in the planning and construction of this building we will have such a large group of undergraduates in third and fourth year prior to its completion that our space problems will be overwhelming. Every priority possible should be given to the provision of this facility. We are now the only progressive medical school in Canada without any University space provided for the clinical years of medicine.

A recent brief has been forwarded to the Vice-President, at his request, referable to the long-term requirements of the basic science departments in the Medical Sciences Building so that further reference to this subject will not be made at this time. With an attempt to predict the future enrolment in the medical school it still appears to the administration of the Faculty that a graduating class of approximately one hundred and twenty students will be the maximum for the clinical opportunities that we will be able to provide in this area. For this reason it is our considered opinion that in view of the fact that there will be a ten-year interval between the initiation of planning and the first graduating class, the appointment of someone at the University of Alberta, Calgary, in an administrative capacity to begin the

planning of space and personnel for pre-clinical departments and the organization of clinical departments and hospital facilities should be carefully considered.

It is interesting that the University of Sherbrooke has now had a Dean of a Medical School appointed for a period of six years and they have yet to register their first student in first year medicine, although the individual concerned has been actively busy in the planning for this event.

Surgical-Medical Research Institute

The Surgical-Medical Research Institute has continued to provide space and facilities for the clinical teachers to carry out basic fundamental research on the experimental animal. The activities of this Institute have been a source of pride to the Medical School administration for many years but this year we were particularly pleased that for the fourth time in a period of approximately twelve years the Royal College Gold Medal in Surgery awarded for the best piece of fundamental basic research in our country was presented to Dr. William J. O'Callaghan working in the Surgical-Medical Research Institute under the guidance of Dr. T. S. Speakman of the Division of Neurosurgery in the Department of Surgery.

McEachern Laboratory

The McEachern Laboratory, under the direction of Dr. A. R. P. Paterson has continued their program of basic research at the cellular level in the field of cancer. The basic interests of the laboratory, that of chemotherapy, is one of vital importance and Dr. Paterson and his colleagues will continue to make outstanding contributions in this area.

I would be remiss in this report, Mr. President, if I did not extend to you, the Vice-President and the various administrative officers of the University the sincere thanks of our Faculty for the co-operation and assistance provided to us in the solution of our many problems during the year.

Report of Miss Ruth E. McClure, Director of the School of Nursing

Enrolment in the School of Nursing continued its upward trend. The most marked increase was seen in the number entering the First Year of the Basic Degree programme. This rose from 54 in 1962 to 76 in 1963. Also, the increase in numbers of graduate nurses seeking to complete requirements for the B.Sc. degree is very encouraging. Twenty-seven were enrolled in this Post-basic pattern in 1963, an increase of 8 from 1962.

However, the increased withdrawal rate among students during the second year of the B.Sc. programme has been a source of concern, and has been the subject of serious study by the faculty of the School of Nursing during the past year. Findings indicate the need for change within the present five-year pattern. Thus, a new programme of four years duration has been proposed and is currently under careful consideration.

In addition to the regular teaching programme, special arrangements were made for late afternoon sessions in Nursing Education 453—"Hospital Nursing Service", to enable 22 graduate nurses employed in local hospitals to enrol in one of the regular courses as part-time students.

In co-operation with the Department of Extension, a very successful course in Supervision in Nursing was held at the Banff School of Fine Arts from March 15-20. It was attended by 67 nurses from all parts of the province. Since the nurses indicating interest in taking this course far outnumbered the accommodation, plans are being made to repeat the course for a second group at a later date. One six-weeks course in the Care of the Premature Infant was held during the year in co-operation with the Department of Extension and the University Hospital. Unfortunately, the lack of an instructor prevented repetition of this course during the year.

In addition to the study on the Attrition Rate of B.Sc. students during the past five years, which is being carried on in co-operation with the Department of Psychology, a study toward Refinement of Prediction Categories and Selection Techniques for Student Nurses is underway. Also, in co-operation with the Faculty

of Education, a study is in progress of correlation between High School academic achievement and achievement on the N.L.N. examinations in Schools of Nursing in Alberta.

Members of the faculty continue to extend their efforts into the community and to participate actively in the affairs of the nursing profession both on the local and national basis. This has included participation in the preparation and presentation of a Brief by the Alberta Association of Registered Nurses to the Cabinet of the Province of Alberta on May 5, 1964. In efforts to promote progressive changes within nursing education and practice, members of the staff have been active on a number of committees to study specific facets, and have participated as speakers in nursing staff education projects of health agencies. One staff member served as consultant to a course in Supervision for Senior Nursing Executives held at the University of Western Ontario last summer.

Visitors

During the past year we were pleased to welcome visitors from World Health Organization, Ghana and New Zealand as well as nurses from national official and voluntary health agencies.

Staff Changes

The resignation of Miss Margaret Madden, Lecturer in Advanced Practical Obstetrics, is announced with regret. The appointment of Miss Peggy Field to this position will be effective July 20, 1964.

Publications

The work of the Nursing Education Survey Committee was completed with the publication of its *Report* in October, 1963. Miss Margaret Campbell of the School of Nursing served as a member of this Committee throughout its two-year study.

Report of Dean M. J. Huston of the Faculty of Pharmacy

The 1963-64 session was a busy and successful one for the Faculty of Pharmacy. The enrolment was the highest in its history and the graduate program and research activities were maintained at a gratifying level.

ACADEMIC

Enrolment

Enrolment was the highest in the history of the Faculty with 222 students. A large number of women continue to enter pharmacy and they constitute 47% of the present class. More students applied than could be accommodated and it was necessary to impose a quota. Eighty-six new students were accepted.

Curriculum

The optional fourth year program was made available for the first time and although enrolment was disappointing there was a gratifying increase in the number of students planning to undertake such specialization in the future.

Research and Graduate Studies

Faculty members continued an energetic research programme with specialization in the following fields: extraction and characterization of principles from plants; development of methods of drug analysis; synthesis of new compounds; isotope tracer investigations of drug distribution; pharmaceutical formulations; and effect of drugs on tissue metabolism.

The graduate program was maintained at a satisfactory level with eleven students working towards advanced degrees—five of these towards the Ph.D. degree. There is a marked increase in the number of students applying for graduate work in pharmacy from many areas throughout the world. At fall convocation the second Ph.D. degree offered in pharmacy was awarded. This is the second Ph.D. degree ever given for work in a Canadian pharmacy college. The first such degree was also given at Alberta.

Space and Facilities

The present quarters and facilities are excellent both for teaching and research. However, with the increased numbers of applications for both graduate and under-

graduate work the space is inadequate, as evidenced by the necessity for a quota, and plans have been proposed to remedy the situation.

ACADEMIC STAFF

The Faculty members continue to provide information to practising members of the profession. Many phoned, written and oral requests for information were answered during the year.

Three new full-time members were appointed to staff. R. E. Moskalyk, J. N. Hlynka and Miss W. A. Edmondson. In addition, D. M. Cameron and W. W. Maday were appointed sessional lecturers in Pharmacy Administration and Hospital Pharmacy respectively.

Members of the Faculty continue to play an active part in various local, provincial and national pharmaceutical and scientific organizations and in other ways participate in the life of the community and the profession. A summary of some of these activities follows:

Dr. B. E. Riedel—Chairman, Committee on Committees and Committee on Curriculum of the C.C.P.E.; Chairman of several University committees and Secretary of the Academic Planning Committee; Executive Assistant to the Vice-President; Commanding Officer, University R.C.A.F. Squadron; presented three talks to non-university groups.

Dr. A. J. Anderson—Chairman, Student Admissions Committee; Pharmacy representative on Council of the Faculty of Science; University Committee on Student Placement; University Committee on Semester System; University Committee on Grading; Chairman, Archives Committee of Alberta Pharmaceutical Association; Chairman, Practical Training Committee, Canadian Foundation for the Advancement of Pharmacy; Secretary-Treasurer, Canadian Conference of Pharmaceutical Faculties; Committee on Fluorides of Alberta Dental Society and Edmonton and District Druggists Association; Alberta Pharmaceutical Association Committee on Drug Schedules; gave two talks to non-university groups.

Dr. L. G. Chatten—Space Committee for Medical Sciences Building; has been asked by an American publisher to edit a book on pharmaceutical analysis; gave two papers to non-pharmacy groups.

Dr. K. H. Palmer—University First Year Standing Committee; presented a paper over CKUA on "Drugs from Folklore."

Dr. J. C. Morrison—General Residence Committee; Faculty resident of Men's Residence.

Dean M. J. Huston—Canadian Drug Advisory Committee; Editor, Scientific Section, Canadian Pharmaceutical Journal; Member, Editorial Advisory Board, Canadian Pharmaceutical Journal; Board of Directors, Canadian Foundation for the Advancement of Pharmacy; Council, Canadian Pharmaceutical Association; Vice-Chairman, Committee on Research and Graduate Studies, Canadian Foundation for the Advancement of Pharmacy; Chairman, Publications Committee, Canadian Conference of Pharmaceutical Faculties; Chairman, Government Liaison Committee, Canadian Pharmaceutical Association; various University committees and councils; worked with Alberta Pharmaceutical Association committees on revision of pharmacy act; presented twenty-two talks to service clubs, fraternal organizations, etc.

Distinguished Visitors

During the year the Faculty had visits from three distinguished scientists. Dr. A. H. Beckett, Dean of the Chelsea College of Science and Technology, visited the campus in October under the sponsorship of the National Research Council and the Canadian Conference of Pharmaceutical Faculties. Dr. S. E. Wright, Head of the Department of Pharmacy, University of Sydney and Dr. W. E. Court, Senior Lecturer in Pharmacognosy, University of Liverpool, were visitors in March. All three men presented lectures, participated in seminars and discussions with graduate and undergraduate students and were a useful stimulus to students and faculty alike.

Meetings

The faculty members and graduate students attended a meeting of the Association of Western Colleges of Pharmacy in Saskatoon in March. A total of 22 made the trip.

Two days were usefully devoted to research papers and discussions on curriculum, teaching methods and professional matters.

Staff members continue to play an active part in the affairs of the Canadian Conference of Pharmaceutical Faculties. Dr. A. J. Anderson is Secretary of that organization and other faculty members participate in committee work, research conferences and seminars.

OTHER INFORMATION

Student Activities

The student organization had an active year and served to foster an excellent *esprit de corps* among the pharmacy students.

Professional Liaison

The Faculty enjoys an effective liaison with the Alberta Pharmaceutical Association. Dean Huston attends all meetings of the Council. Dr. Anderson and Dean Huston are members of the committee to revise the Alberta Pharmacy Act. The Council continued the long-standing tradition of providing a breakfast on the morning of Convocation day for the graduands and their friends.

Dean Huston is a member of the Council of the Canadian Pharmaceutical Association representing the Canadian Conference of Pharmaceutical Faculties, and a Director of the Canadian Foundation for the Advancement of Pharmacy.

Faculty members from Alberta have been involved in the establishment and implementation of the Pharmacy Examining Board of Canada. The act to establish this Board was passed by the Federal House in December.

Report of Dr. M. T. F. Carpendale, Acting Director of the School of Rehabilitation Medicine

It is a pleasure to present the annual report of the School of Rehabilitation Medicine for the year 1963-64.

In September 1963 the School received over one hundred applications and of these only forty could be accepted due to the School quota. The present school enrolment includes thirty-nine (39) first year students, eighteen (18) second year students and this June eleven (11) students graduated in the division of Physical Therapy and one (1) in the division of Occupational Therapy.

It was found necessary to employ a part-time lecturer in the division of Occupational Therapy, to assist in lecturing and laboratory demonstrations. It is anticipated one full-time staff member will be employed for the 1964-65 session, bringing the number of staff in each division to three.

Mr. Allbon, Head of the Occupational Therapy division, attended the Annual Meeting of the Canadian Association of Occupational Therapists on behalf of the University and also as a representative of the Alberta Society of Occupational Therapists. Miss Bradshaw, Head of the division of Physical Therapy, attended the Annual Meeting of the Canadian Physiotherapy Association, which was held in Winnipeg in June.

Refresher courses were held by both the Alberta Society of Occupational Therapists, and the Edmonton Branch of the Canadian Physiotherapy Association.

Due to ill health, the Director and founder of the School, Dr. J. R. Fowler, was forced to resign his position as director, effective June 30th, 1964. Dr. M. T. F. Carpendale has been appointed director.

It should be noted that effective April 1st, 1964, the name of the School of Physical and Occupational Therapy was changed to School of Rehabilitation Medicine. Some minor changes have been made in the course; the most significant one being that on registration a student will indicate in which field he or she wishes to train and after a period of approximately three months they will confirm this decision or change. They will then proceed with subjects pertinent to their choice and will, in second and third year undertake courses in their speciality.

The School will be moving to the Old Education Building over the summer, and classes will commence in these quarters in September, 1964.

Report of Dean M. L. Van Vliet of the Faculty of Physical Education

Brief reports from the various departments or divisions of the Faculty are attached. The major highlights of the year follow.

Faculty Status

The status of the School of Physical Education was raised to that of a Faculty on April 1, 1964. Departments or divisions of the new Faculty include the Bachelor of Physical Education Program, Graduate Studies, Women's Program (Service Program and Intramural Sports), Men's Program (Service Program and Intramural Sports), Bachelor of Arts in Recreation Program and Teacher Education.

Staff

Miss Patricia Austin and Mr. Allan Affleck have been on leave to complete their doctorate degrees at Michigan State University and the University of Oregon respectively. Dr. W. D. Smith is President of the Canadian Camping Association and Dr. M. L. Howell is the President of the Canadian Association for Health, Physical Education and Recreation. Drs. Howell and Van Vliet were awarded Travel Fellowships for two months in Western Europe by the National Council of Fitness and Amateur Sport. A two-hundred page report of this trip is being published by the Queen's Printer. Dr. Morford has accepted an invitation to collaborate with Dr. Franklin Henry of the University of California on a research study over the 1964 summer months. Dr. Van Vliet was given the Honor Award by the Canadian Association of Health, Physical Education and Recreation in recognition for outstanding service to these professions.

With the addition of Dr. W. R. Morford to the staff, a new Motor Learning Laboratory is being developed and two new courses are being offered. They are Psychomotor Skills offered through the Faculty of Science and a Seminar in Motor Performance offered as a graduate course in the Faculty of Physical Education.

Research

The amount and calibre of research being attempted and published through the Laboratory shows steady improvement. The Federal Government has granted another \$7,000.00 for the continuation of one project and the Fitness Research Institute should be in operation on the campus by September, 1964. This will provide an annual amount of \$50,000.00 for investigation into fitness problems as they effect the general public.

Graduate Students

Projects engaged in by graduate students include testing of a segment of the Alberta population concerning "Work Capacity", fitness testing of prospective city fire-fighters and the establishment of adult fitness and performance levels through a study of service personnel.

Scholarships

Thirty-three students who have completed work in the Faculty or who are planing to enroll in the Faculty were granted scholarships by the National Council of Fitness and Amateur Sport. These ranged from \$700.00 for summer session to \$2,000.00 for winter session.

Report of Dean M. Wyman of the Faculty of Science

Although established as a Faculty on July 1st, 1962, the Council of the Faculty of Science met as an independent council for the first time during the current session, 1963-64. At the beginning of the year, the departments of Botany, Chemistry, Geography, Geology, Mathematics, Microbiology, Physics, Psychology, Zoology, and the School of Household Economics comprised the Faculty of Science. By the end of the year two departments, Computing Science and Genetics, were added to the Faculty.

Students

Although the student population of the University is now increasing by 8% per year, enrolments in the Faculty of Science continue to increase at a rate of about

15% per year. In addition, the demands from other faculties have raised the number of course registrations in the Faculty of Science to 14,000 for the 1963-64 session. On the average, each permanent member of staff continues to be responsible for about 100 students enrolled in science classes. The Faculty of Science does about 25% of the teaching required in the University and is responsible for the programs of study of about 30% of the students registered in the Faculty of Graduate Studies.

Staff

At the present time there are about 140 full-time members of staff in the Faculty of Science. Without the assistance of a substantial number of graduate teaching assistants, the present staff could not carry the work load of the Faculty.

During the 1963-64 session, the staff members of the Faculty of Science published over two hundred research papers, most of which appeared in first rate journals. These papers provide a reasonable measure of the research activity of our staff and the increased emphasis on research that is now being placed by our University.

International recognition being given to the research work of some of our members of staff is now becoming commonplace. As examples, Professor R. U. Lemieux was awarded the Palladium Medal of the Chemical Institute of Canada. Professor H. E. Gunning was elected a Fellow of the American Association for the Advancement of Science and the Royal Society of Canada. Professor J. McNamee was awarded a National Science Foundation Visiting Professorship. Professor L. Lorch will be a Visiting Professor at Aarhus University, Denmark.

As mentioned above, recognition of this type has now become commonplace and the above list of examples is far from complete.

Distinguished Visitors Program

During the 1963-64 session, the Faculty of Science brought forty-five distinguished scientists to visit our campus, scientists who came from eight different countries.

This program is of utmost importance in breaking the isolation factor that exists on our campus. It is one way members of our staff can keep in touch with important research activities being developed around the world.

Space Requirements

It is most unfortunate that the space being allocated to the departments in the Faculty of Science is in no way a measure of their actual space needs. Since the contemplated Biological Sciences Building will not be ready before 1968, it seems certain that some curtailment in course registration in the Faculty of Science will have to be made some time during the next five years.

Report of Dr. John W. Gilles, Director of the Evening Credit Program

(Northern Alberta Centres)

In 1963-64 courses were offered at nine centres in Northern Alberta, one less than the previous year. The course originally scheduled for Wainwright had to be withdrawn for lack of an instructor willing and able to cope with the very real difficulties involved in commuting between Edmonton and that centre.

The total number of students registered for courses at centres in Northern Alberta was 1,276 compared with 1,108 in 1962-63, an increase of approximately 15%. This increase resulted from a substantially larger enrolment at Edmonton. The total number of registrations at off-campus centres was approximately the same as last year.

The percentage distribution of students by faculties showed little deviation from that of previous years.

Forty-five instructors were engaged in offering courses in the Evening Credit Program this year. Of these, forty-one were also teaching in the daytime program.

The salient features of this year's Evening Credit Program, compared with those of last year, are indicated in the following summaries.

CENTRES, COURSES AND REGISTRATIONS

Centre	Number of Courses Offered		Number of Students Registered	
	1962-63	1963-64	1962-63	1963-64
Edmonton	26	31	756	925
Camrose	1	1	13	28
Evansburg	1	1	30	17
Grande Prairie	1	1	63	34
Holden	1	1	20	30
Radway	1	1	26	57
Red Deer	3	3	137	131
Vegreville	1	1	16	37
Wainwright	1	.....	20	.....
Wetaskiwin	1	1	27	17
TOTAL	37	41	1,108	1,276

CLASSIFICATION OF STUDENTS

	Registration	
	1962-63	1963-64
Faculty of Education	820	1014
Faculty of Arts	103	152
Faculty of Science	29	28
Faculty of Graduate Studies	24	34
Faculty of Commerce	10	26
Other Faculties and Schools	12	22
Special Students	110	.....
TOTAL	1,108	1,276

Report of Dr. T. G. Finn, Director of the Evening Credit Program 1963-64, Southern Alberta

New Developments

With the cooperation of CFCN-TV and with the consent of General Faculty Council and the Board of Governors, the Evening Credit Program offered a credit course for teachers—Ed. CI 328, Mathematics in Elementary Education—during the 1963-64 year. This is believed to be the first time in Canada that a professional course has been offered for credit over television. CFCN-TV considered this to be a public service and shared the cost. The organizers and instructors were Dr. S. A. Lindstedt and Dr. A. A. Gibb of the Faculty of Education, Calgary.

Registrations at Drumheller and Olds were insufficient to warrant offering a course, and these centers had to be closed for 1963-64. Two new centers were opened at Bow Island and Vulcan.

Registration

In the regular program there were 635 students admitted to a total of 25 classes, making an average of 25.4 students per class. The television program attracted 144 registrations.

Instructors

There were 28 instructors appointed to the Evening Credit Program, Southern Alberta, 3 of whom were on the staff of the Lethbridge Junior College, one a Superintendent of Schools, and the remainder from the regular academic staff of the University of Alberta, Calgary.

Courses

Eleven courses, including the television course, were offered by the Faculty of Education and fifteen by the Faculty of Arts and Science.

One graduate course offered by the Faculty of Education was shared by three members of the staff. Twelve staff members or guests offered lectures to this class during the term.

Centers Outside of Calgary

Courses are this year being offered at Bow Island, Lethbridge (2), Medicine Hat and Vulcan.

Report of Dr. John W. Gilles, Director of the Summer Session 1963

(Edmonton Campus)

Registration and Attendance

The advance registration for the 1963 Summer Session at Edmonton reached a total of 4,113. Of this number, 854 students did not attend, so that the actual enrolment was 3,259, an increase of 448, or 16% over that of last year.

This very substantial increase probably resulted in large measure from the fact that the minimum certification requirement for elementary school teachers was raised last September from one to two years of university preparation. It probably indicates also that the immediate effect of providing a Summer Session at Calgary, which has been to lower enrolment slightly at Edmonton during the past two years, has now been fully felt, and that enrolments may now be expected to resume their long range tendency to increase moderately from year to year.

The distribution of students by faculties was as follows: Education, 83%; Graduate Studies, 7%; Arts, 6%; Science, 3%; other faculties and schools, 1%.

Instructors

The Summer Session teaching staff comprised a total of 152 instructors, 15 more than in 1962. Of these, 122 or 81%, were regularly engaged in teaching at university or junior college levels, or had had several years of such experience in the recent past. Eighty-four, or 55%, were members of the staffs of the University of Alberta or of its affiliated colleges.

Courses

One hundred and twenty courses were offered in the 1963 Summer Session. Included among these were two new refresher courses designed to meet the needs of high school teachers of biology and chemistry: Biology 330—Principles of Biology; Chemistry 330—Fundamentals of Chemistry. For the first time also graduate courses in physical education and in psychology were provided.

Size of Summer Session Classes

Of the 152 teaching sections provided in the Summer Session, about 30% numbered 20 or fewer students each; another 60%, 20 to 60 students; and the remaining 10%, over 60 students. The average class size was 38 students compared with 31 in 1962 and 33 in 1961.

Associated Activities

The following activities, although not directly sponsored by the Summer Session, were given official encouragement and administrative assistance.

Leadership Course for School Principals. The non-credit short course is educational leadership for school principals was given again at Concordia College during the Summer Session with sixty participants.

Summer Festival. The "Summer Festival" of concerts, films and lectures, sponsored by the Department of Extension provided for the general public of Edmonton and district a cultural program of high artistic merit. The program included six musical concerts, four outstanding films, and productions of *Tosca* and *Othello* by the Banff School of Fine Arts.

"Drama for a Summer Night". During the last three weeks of the Session the Division of Drama presented nightly, Tuesday through Saturday, the musical, *The Fantasticks*. The production was staged in the *Torches Theatre*, an outdoor theatre situated in the south court of the Education Building.

Film Series—Understanding Minorities. The Canadian Council of Christians and Jews, Western Division, in association with the University's Division of Sociology, sponsored a special series of four films that examined racial and ethnic conflicts. Members of the Division of Sociology acted as discussion leaders at the film showings.

Grade XII Summer School for Teachers. Concurrently with the 1962 Summer School for teachers with matriculation deficiencies. Approximately 230 teachers registered in the Grade XII Summer School, a marked decline from the 380 who registered in 1962.

Scripture Courses. The University provided classroom space for a six-weeks', non-credit scripture course, Recent Trend in New Testament Studies, sponsored by the Edmonton Separate School Board. The course was given by Dr. Thomas W. Leahy, S.J., Supervisor of New Testament Studies at Alma College, Los Gatos, California. Approximately 75 students attended the course.

Blood Donor Clinic. For the first time a blood donor clinic was held on the campus during the Summer Session. Red Cross officials expressed satisfaction that slightly over 300 donors came in during the two-day clinic.

Statistics

SUMMER SESSION ENROLMENTS, 1959-63

Year	Enrolment
1959	2,714
1960	2,985
1961	2,903
1962	2,811
1963	3,259

CLASSIFICATION OF STUDENTS

Faculty of Education	2,696
Faculty of Arts	199
Faculty of Science	87
Faculty of Graduate Studies	218
Other Faculties and Schools	59
	<hr/>
	3,259

CLASSIFICATION OF INSTRUCTORS

Instructors from Affiliated		
Full-time Members of		
University Staff		81
Institutions		3
Guest Instructors		
<i>From Alberta</i>		
Department of Education	1	
School Systems	8	
Others	21	30
	<hr/>	
From Other Canadian Provinces		7
From U.S.A.		25
From Other Countries		6
		<hr/>
		68
		<hr/>
		152

DISTRIBUTION OF CLASSES ACCORDING TO SIZE

Size of Class or Section	Frequency
10 students or less	14
11 to 20 students	32
21 to 40 students	67
41 to 60 students	23
61 to 80 students	15
81 to 100 students	
Over 100 students	1
	<hr/>
Total	152

Report of Dr. T. G. Finn, Director of the Summer Session 1963, Calgary

1. Registration and Attendance

The advance registration for the 1963 Summer Session reached a total of 1,274. Of this number 253 failed to attend so that the actual enrolment amounted to 1,021, an increase of only 6.7% over 1962, when there were 957 students.

SUMMARY OF ATTENDANCE

Faculty or School	Male	Female	Total
Education	428	487	915
Arts and Science	52	25	77
Nursing .....	.....	2	2
Commerce	2	.....	2
Graduate Studies	5	1	6
Household Economics .....	.....	1	1
Engineering	2	.....	2
Physical Education	2	1	3
Special	5	8	13
	<hr/> 496	<hr/> 525	<hr/> 1,021

2. *Instructors*

The Summer Session staff comprised a total of 54 instructors of whom 36 were from the staff of the University of Alberta, Calgary. Of the visiting instructors, eight were from Calgary, one from the University of Alberta, Edmonton, five from points in Alberta outside of Calgary and Edmonton, and four from outside of Alberta. Visiting instructors from outside the province were:

Mr. Donovan F. Cowan	Director of Music, Saskatchewan Teachers College, Regina
Dr. Lawrence B. Lee	Associate Professor of History, San Jose State College, California
Dr. Eugene H. Stivers	Assistant Professor of Education, Los Angeles State College, California
Dr. Howard M. Vollmer	Research Sociologist, Stanford Research Institute, Menlo Park, California

3. *Courses*

A total of 49 courses were offered in the 1963 Summer Session, Calgary, five of which had two sections each. In two cases an instructor taught two courses, and in one case two instructors shared one course. The Departments at the University of Alberta, Calgary, supported the Summer Session very well with the result that two-thirds of the courses were in the hands of staff members of the University of Alberta, Calgary. This resulted, however, in a relatively small number of visiting professors to confer with their colleagues in Calgary.

4. *Size of Summer Session Courses*

The size of Summer Session classes tended to remain about the same as in 1962, as is shown in the following table:

Size (class or section)	Frequency	
	1962	1963
10 or less	5	4
11 to 40	37	36
41 to 60	7	13
61 to 80	0	1
81 to 100	0	0
over 100	0	0
	<hr/> 49	<hr/> 54

In the 1963 Summer Session, Calgary, the average class size was 27.8 students, compared with 28 in 1962.

5. *Special Events*

The Banff School of Fine Arts, assisted in Calgary by the Extension Department of the University, presented the opera "Tosca" at the Southern Alberta Jubilee Auditorium, and also gave a ballet performance and Shakespeare's "Othello" at the Allied Arts Centre Theatre.

The Canadian Council of Christians and Jews organized the showing of four films, each with a discussion leader, as was done in previous summers. These sessions were quite well attended. Dr. Max Howell, President of the Canadian Association for Health, Physical Education and Recreation, and member of the staff of the University of Alberta, Edmonton, spoke to Summer Session students on some aspects

of research in Physical Education. Professor H. R. McArthur of the Faculty of Engineering, Calgary, gave a lecture on "Peace Research". The Physical Education Department showed a film, "The Record Breaker", which was on Australian swimmers who are responsible for setting a number of world swimming records.

The Calgary Summer Festival of Arts was revived in the summer of 1963 and students were invited to attend. One new feature was introduced to Summer Session in 1963, that of an audio-visual display put on by a local theatre supply company. This proved to be of particular interest to teachers. One week was set aside also for a display of educational publications.

Mr. Robert Bratton acted as Co-ordinator of Student Activities for the Summer Session. He helped the students to organize athletic activities, a noon-hour coffee party with entertainment, and a noon-hour luncheon with a variety program.

Again the Summer Session had a strong executive with the following officers: President, Mr. Deane Jensen; Vice-President, Mr. Herman Woetowich; Secretary, Miss Carole Boyd; Social Convenor, Mr. Frank Lough. A new feature of the Summer Session Students' Union in 1963 was the introduction of a daily bulletin, with Miss Gloria Dalton as editor.

A Summer Session tea in honour of the Summer Session staff was given in the courtyard of the Science and Engineering Building on Friday, July 5. Receiving the guests were Mrs. Malcolm Taylor, Dean and Mrs. Harold S. Baker, and Dr. and Mrs. T. G. Finn.

6. *Concomitant Activities*

The following activities, although not directly sponsored by the Summer Session, were given official encouragement and administrative assistance:

Mount Royal Summer Session for Grade 12

The policy of permitting students at Mount Royal College who were completing their matriculation to register also in one course at the University of Alberta, Calgary, Summer Session, was continued.

National Employment Service

The offices of the National Employment Service were kept busy during the summer by Superintendents of Schools looking for teachers and by teachers looking for positions.

Report of Mr. R. W. Longley, Chairman of the Directorate of the Boreal Institute

May, 1963 — April, 1964

In January, 1960, the Boreal Institute was established at the University of Alberta, Edmonton, with Professor W. C. Wonders as Chairman of the Directorate. The purpose of the organization was given as three-fold:

- 1) To establish and develop an information centre about the polar regions for the benefit of the university circle and also of those interested people outside the university.
- 2) To promote study of the northern lands through the university curriculum.
- 3) To assist in and supervise research on the northern areas of our continent.

This general report is being presented to tell the progress in each of these aims during the past year.

Library:

In November, the library of the Institute was moved from cramped quarters in the Rutherford Library to the basement of the new Cameron Library. Here there is a considerable addition in space. The new location is also more easily found, and as a result the number of visitors has increased during the past months.

Our librarian, Mr. P. H. Connolly, resigned in September. His replacement, Mr. Ralph Nielsen also left to take a post in the United States. The library is now under the care of Mrs. H. Robinson.

With money allotted by the University, we have continued to increase the stock of books, pamphlets and magazines. At the present time we have approximately 2,000 books and about the same number of pamphlets. We continued to receive about 250 journals and periodicals.

We were fortunate, recently, to acquire pictures, manuscripts, and other personal material on the north formerly belonging to Mr. Louis Romanet. Early this century Mr. Romanet came from France to northern Canada as a factor of the Hudson's Bay Company. Except for a short period when he served in the armed forces in World War I, he remained in the north until about 1930. He was the hero of a book, "Kabluk of the Eskimos," by Mr. Lowell Thomas. He also wrote a number of short stories, which give authentic details of the Eskimo as he saw them.

Printing

The thesis by Mr. Larry Bourne, "The Urban and Regional Economy of Yellowknife, N.W.T." mentioned in our 1963 report, was published last summer by the Department of Northern Affairs and National Resources. We were provided with a number of copies. Our supply was distributed as widely as possible, but is now almost exhausted. The Department also reports that they too have no more copies.

Under the guidance of Professor W. A. Fuller, a former Director of the Institute, the translation of a Russian paper, "Snow Cover as an Integral Factor of the Environment and its Importance in the Ecology of Mammals and Birds," by A. N. Formozov, has been printed by our University printing department. This is being distributed on an exchange basis to a number of polar research institutes. We have also additional copies which are available for purchase.

Teaching

No formal courses on the north have become established because of the Boreal Institute. This does not mean that its influence is not felt in the curriculum of the University. Each autumn the pertinent departments are told of the library and its purpose, and invited to use its material.

The use of the Boreal Institute and its library is greatest among our graduate students. The source material is being consulted by students in the preparation of theses dealing with the north. In some cases, as noted in our report on research, the search is leading to research topics. This is particularly true in the Departments of Zoology, Geology, Geography, and Botany, although the use of the library is not restricted to these. Gradually its reputation is becoming known. Next autumn a student is coming from West Germany on a scholarship from his government, to study the North American Eskimo, led here by our northern interest and the facilities of the library.

Research

Money for research came 18 months ago from the Department of Northern Affairs. This was supplemented later by a sizeable grant from Yellowknife Transportation. Some of the research planned for 1963 with these funds was curtailed by lack of manpower. Nevertheless significant research was done in several fields.

Professor F. A. Campbell reported on his trip to study ash-fall in the Yukon as follows:

"In the spring of 1963 a grant of \$700 was received from the Institute. The grant was to support a study of a recent volcanic ash-fall in the Yukon Territory.

"In the summer of 1963 F. A. Campbell and J. F. Lerbekmo travelled over 4,000 miles during a three week field trip and collected 160 samples of the ash. Since that time an M.Sc. thesis based on the study of the samples has been undertaken by L. Hanson. Mr. Hanson will complete the thesis this summer and a copy of it will be sent to the Institute by the fall. Rather than elaborating upon the details of this study I would ask the Institute to await the completion of the thesis for that information.

"Aspects of the chemistry and mineral composition of the ash not covered by Mr. Hanson will be continued by the writer. The support of this project by the Institute is most gratefully acknowledged."

Another geological field trip under the auspices of the Institute was made into the Yellowknife area by Professor R. E. Folinsbee et. al. He reported his findings as follows:

"A field party of three Geology and Physics Department staff members, three graduate students and an assistant, spent two weeks mapping and collecting samples in the Yellowknife area, N.W.T., July-August, 1963.

"Three projects were undertaken:

1. A study of the simatic dykes intruding the Archean rocks of the Yellowknife district. These dykes have been dated using the potassium-argon methods (Burwash *et al.*, 1963), two papers on these dykes have been presented,* and a third, bearing on continental drift and involving long distance correlations, is to be presented this spring to the Canadian Association of Physicists in Charlottetown, P.E.I.
2. A collection of granite boulders from the base of the Yellowknife Archean sediments gives promise of yielding some of the oldest dates (greater than 2.7 b.y.) of any rocks known in North America. Zircons have been separated from these rocks and radiometric dating is in progress.
3. A suite of 2.7 b.y. Archean granites of the Yellowknife area have been collected and radiometric dating is underway.

Professor J. G. Parker continued his studies of Arctic flora with assistance from the Institute. He reports as follows:

"This project is being carried out jointly with Dr. A. W. Johnson, University of California in Los Angeles, and it has been financed mainly from U.S. sources. Nevertheless, the grant of \$650 to J. G. Packer for the 1962-63 period proved to be invaluable.

"Work began at Ogotoruk Creek in N.W. Alaska in the summer of 1962 and involved the collection of plant material from which the chromosome numbers of the different species could be established. This process was continued during the summer of 1963, by the end of which chromosome numbers had been determined for about 200 species. Material of the remaining 100 species has been collected but has not yet been processed.

"The importance of chromosome numbers in taxonomic and phytogeographical studies has been recognized for some while. They can give us a much clearer understanding of the origin of a species and its history. With improved knowledge of the history of the individual species in a flora, we can obtain a more certain understanding of the history and evolution of the flora as a whole.

The present investigation is the first of its kind in the Arctic of North America and it is of great significance in that for the first time cytotaxonomic comparisons will be possible between the Arctic flora of Europe and that of America."

Mr. Howard Wilson, a graduate student of the Department of Political Economy, reports on his research as follows:

"My original interest was on the economic prospects for development of the Northwest Territories. My second area of research was to take a given find, e.g., the iron ore find at the boundary of Yukon and the Northwest Territories, and to determine the possibilities of export into the world market.

"My research into the resource endowments of this area indicated that the north, although undoubtedly rich, was not and was unlikely to become a unique depository of mineral wealth. For the U.S. market, with sources much closer, the north will not become, in the foreseeable future, anything else but a marginal source of supply.

"The primary problem of northern development resides, then, in the problem of where likely markets would be for the resources. The best prospects would appear to be, for the western Arctic, Japan, and for the eastern Arctic, Europe. My studies along these lines are continuing."

Professor C. H. Hobart, Department of Sociology, reported on his studies of Eskimo education as follows:

"Two data collecting trips have been made to the Arctic Ocean and to settlements along the Arctic Coast. These trips have taken me to Cambridge Bay, Gjoa Haven, Spence Bay, Aklavik, Tuktoyaktuk, Fort McPherson, Coppermine, Holman Island, Inuvik, and Yellowknife. With these trips I have been able to interview

*Burwash, R. A., Baadsgaard, H., Campbell, F. A., Cumming, G. L. and Folinsbee, R. E. 1963. Potassium-argon dates of diabase dyke systems, District of Mackenzie, N.W.T.: Trans. C.I.M.M., vol. LXVI, pp. 303-307.
Folinsbee, R. E., Baadsgaard, M., Burwash, R. A. and Cumming, G. L., 1963. Time of intrusion of mantle generated diabase and gabbro dikes, Yellowknife continental nucleus, Canada: XIII General Assembly, Intern. Union of Geod. & Geophys., Berkeley, California, pp.1-34."

Eskimo parents, school children, teachers and other interested white people. Subjects of discussion included their observations on consequences of schooling. Also included were the different school systems: day schools, hostel schools, and boarding with other Eskimo families.

"The first trip was valuable because I was able to observe some of the children as they were leaving home for the first time to go to the Inuvik school, and to note their problems during the time they settled into the new environment. My trip also gave me an opportunity to observe the situations in day schools, comparing them with the Inuvik situation.

"The second trip, travelling to Yellowknife, permitted me to obtain information on students and graduates of the Sir John Franklin School. A study of the subsequent adjustment of the 59 Arctic Eskimos will be made. In all, my trips have given me interviews with 73 parents, 16 students and 41 whites (teachers, missionaries, priests, and officials)."

Plans have been made for research parties for this coming summer, and already some money has been paid out to help establish the field parties. Professors Hobart and Packer will continue their studies. Professor Folinsbee will work with Professor Lambert in a study of the petrology and geochronology of nepheline-sodalite syenites, Big Spruce Lake, Yellowknife. A graduate student in the Department of Zoology, Mr. F. T. Theaker, is already in Inuvik to study disease of the lemmings in that area. Studies carried over from 1963 are: a pilot study on the sociology of Yellowknife, and recording on tape of native languages of the north. Other studies being initiated are: a study of the history of the fur trade at Fort Chipewyan, and a pilot study of the geomorphology of the Mackenzie River Valley.

The Board of Directors has not been able to promote the Institute and its development as it would wish because of the demands of other tasks. Yet the Institute has during the year made progress in the aims for which it was established. This progress, in spite of the lack of promotion, provides evidence that the Institute serves a purpose and should be considered a small but valuable part of the University.

The Board of Directors for the year were:

- Prof. C. S. Brant (Anthropology)
- Prof. F. A. Campbell (Geology)
- Dean R. M. Hardy (Engineering)
- Prof. J. G. Packer (Botany)
- Prof. R. W. Longley (Geography), Chairman.

Report of Head D. B. Scott of the Department of Computing Science

1. *Change of Status*

The Computing Center became the Department of Computing Science within the Faculty of Science on April 1, 1964. The Department is responsible for all courses in numerical analysis and for the Master's program in Computing Science in which there are five candidates.

2. *The M.Sc. in Computing Science*

This degree, when it was first offered in 1960 as a joint enterprise between the Computing Center and the Department of Mathematics, was unique in Canada. Now there are a few other universities (for example, Toronto and Western) which offer similar programs.

3. *The Ph.D. in Computing Science*

The Department does not yet have sufficient numbers and diversity of staff to offer the Ph.D. This situation will be remedied in two or three years when some of our own Masters graduates have returned from Ph.D. work elsewhere.

4. *The B.Sc. in Computing Science*

It is interesting that we do not yet offer a bachelor's program although the Master's program is well established. Here, again, the reason is shortage of staff. To satisfy this demand we shall have to appoint to academic positions selected people with only the Master's degree. The problem of staffing universities, which

is difficult enough for all departments, is uniquely difficult for departments of Computing Science. Potential staff are not merely in short supply, they are only now, for the first time, being produced from a vanishingly small number of graduate schools.

5. *Equipment*

On September 1, 1964, the Department will take delivery of an IBM 7040 installation which will increase our speed of computation by a factor of 100 and will place us second to Toronto in Computing facility.

6. *Visitors*

During the past year we have had a number of distinguished visitors, in particular, with the Department of Mathematics, Professor Alfred Renyi, Director of the Mathematics Centre, University of Budapest.

Report of Mr. B. B. Peel, University Librarian

Introduction

The provision of new physical facilities for a university library is a landmark in the development of library service on any campus. In the history of our university library two such events have been the opening of the Rutherford Library in 1951, and of the Donald Ewing Cameron and the Education Libraries in September and December, respectively, of 1963. The opening of the latter libraries brings to fulfilment three years of planning by a building committee, librarians, and architects. Our first months in the Cameron Library would indicate that the building meets the principles established in the planning stage that it must be functional, flexible, and expandable. The Education Library provides for the first time requisite space and study facilities for students in the Faculty.

For library staff the momentous events in the year were the moves to the Education and Cameron Libraries. The former move was of necessity undertaken before the beginning of the university session, and unfortunately before all furnishings were in place, with the result that some double shifting of materials had to be made, and library staff and library users experienced a period of inconvenience. The move to the Cameron Library, originally scheduled for September, was postponed until all was in readiness in late November. In a three-week period some 300,000 volumes and 90,000 documents, micromaterials, map cases, etc. were moved. Each public service department continued to give service in the Rutherford Library almost until the last book was taken off the shelves, and then opened for service after a lapse of a day for resettlement in the Cameron Library. Miscalculations in the shelving sequence in planning the integration of the general and applied sciences resulted in the General Science Floor being closed to the public for four days. Few university libraries have made a move of such magnitude while the session was on without closing down service to the public. Under Mr. Baird's direction the move was highly successful. Mr. Robert Miller, University Shipper, and his moving crew are deserving of commendation for a job well done.

After the move the following remained in the Rutherford Library: the Law Library, the Reserve Book collection, and an undergraduate book collection, and in addition, the Extension Library. The uncertainty of renovation of the air-conditioning system, how this would interfere with library service, how much of the building would be closed off, and the scheduling of construction, made it impossible to attempt more than a minimal service in Rutherford. With noise, dust, and total absence of air in some areas of the building, it is amazing that any students have attempted to study there. The renovations are to be completed by the end of May, and the Library administration plans an effective undergraduate operation next university term.

This year's figures for attendance in libraries have little value as a means of comparing use with previous years because of attempts to change our method of keeping statistics. Previously our attendance statistics were arrived at by hourly counts in the large library reading rooms. In the new libraries turnstiles were introduced in the entrance areas. Unfortunately, in the Cameron Library the turnstiles tend to count twice, as most persons move the bar more than a quarter turn,

and furthermore, many persons have entered through the exit points. The attendance in unsupervised reading rooms in Rutherford, kept open until midnight seven nights a week, was unrecorded. The only certainty about attendance is that it has increased as more study space has become available.

The circulation of books this year was 429,448, an increase of 7%. The Education Library had the highest circulation, followed closely by the Main Circulation Desk; between them the two service points account for over half the circulation of material. Since the moves to new buildings, students have had for the first time direct access to all book collections; reaction to the open stack system has been very favorable. More books are now used in the Library and thus go unrecorded as borrowing transactions.

With the ever-increasing number of loan transactions for library materials, and as the number of borrowers also increases as university enrolment goes up, the Library is experiencing a number of problems in circulation control. An acute problem is obtaining the return of library materials as evidenced by the number of recall notices sent out, 39,685. Perhaps as high as ten percent of these were second recalls sent to persons who had ignored the first. Library staff also made numerous phone calls to persuade borrowers to return books. As a final resort, 147 students were reported to the Provost; the intervention of the Provost is effective but the machinery is too cumbersome and slow. Commencing September, 1964, the Library proposes to institute fines on overdue books held by students. At the same time the Library hopes to introduce identification cards for borrowers. The Library has had a number of incidents of borrowings by persons having no connection with the university and who could not later be traced, and of the signing of fictitious names or the names of fellow students.

When the Cameron Library opened users were most aware of two innovations. The first was the installation of a checker to whom persons leaving the library had to show books carried; this quickly gained acceptance. The second was a two-part punch card for a transaction record, which was less popular as it entailed extra writing on the part of the borrower.

The library system by the end of the year had added the 357,957th accessioned volume; this is exclusive of our collection of about one hundred thousand government documents, a collection of micromaterials which constitutes an important research library in itself, and resources in miscellaneous other forms. If in recent years the library had had a slogan for its acquisitions programme it might have been that of the Peking Chinese—the "Great Leap Forward".

In 1963-64, the library's resources were increased by type of material as follows (the percentage figure is the increase as compared to last year's acquisitions): 49,577 accessioned volumes, of which 8,108 were bound periodical volumes (25%); 24,991 government documents (36%); 208 Alberta theses; 649 maps; 322 titles in microform, namely 923 reels of microfilm, 4,600 (estimated) microcards, and 1,250 (estimated) microprints; 11 phonodiscs and 15 filmstrips. Another 2,352 pamphlets and documents, and 539 standards were added to the General Sciences collection, and 650 pamphlets to the Education Library, while by exchange the Medical Library obtained 1,232 issues of periodicals.

An important feature of our acquisitions programme during the year has been the purchase of special collections. The first was the purchase of the Alfred Wiener collection of approximately 3,498 books and pamphlets relating to modern German history: the strength of the collection is in the Third Reich period, and includes not only works of the chief Nazi authors on all aspects of the Nazi state, but also of those in opposition to the totalitarian state. The collection may be one of the best in this subject area on this continent. A second large purchase by the library was a collection of scientific and technical magazines for \$40,000; the collection was divided about evenly between the libraries on the Edmonton and Calgary campuses and immeasurably strengthened the periodical collections of both. In addition, a quarter of the book budget was spent on the purchase of back files of periodicals. In the last two years a number of reference or bibliographical works have been added which give immense strength to the research potential of the library.

From among the Library's acquisitions the following individual titles are probably the most noteworthy: Scaliger's *Poetices libri septem* (Lyons, 1561); John Donne's *Poems* and his *Juvenilia* (published in 1633); Bishop Saint Valier's *Rituel du diocese de Quebec* and his *Statut, Ordonnances et lettres pastorale* (published in Paris in 1703); (anonymous) *State of the British and French colonies in North America . . . in two letters to a friend* (London, 1755).

For the first time since 1945 the Librarian's report does not include the report of the Library on the Calgary campus.

Staff

The turnover of staff was abnormally high, for no less than forty people resigned during the year for one reason or another. To replace these and to fill new positions created, the Library had to train some sixty new staff members. This placed an excessive burden on persons in supervisory positions; "Increasingly the role of the professional librarian becomes that of a senior commissioned officer, directing and training a command," the Librarian of the University of Manitoba writes in his report.

Particularly serious were the resignations from our professional staff. The following resigned: Miss Shirley Mooney (June); Mrs. June Thompson (transfer to Calgary campus, June); Mr. Daniel Reicher (August); Mrs. Diane Taschuk (November); Mrs. Carol Lupton (December); Mr. Ralph Neilsen (November); Mr. Donald Baird (April).

The following new staff were appointed: Mrs. Sheila Bertram; Mr. Michael Bulmer; Mr. Seno Laskowski; Dr. William Whiteley; Mrs. Margaret Farnell; Mrs. Natalie Lytwynec.

Within the library organization three persons assumed new responsibilities: Miss Dorothy Hamilton took charge of the Rare Books and Archives Department; Miss Margaret Auxier was promoted to Chief Reference Librarian; Miss Yvonne Fenton became Chief Cataloguer.

In connection with the size of the library staff, it must be borne in mind that with public service areas open fourteen and fifteen hours for five days of the week, and with Saturday and Sunday hours, the equivalent of two and one half shifts are required to operate the Library. Since the non-professional staff went on the five-day week, the Library has had some problems with time-tabling and Saturday staffing.

The Library was well represented at the Alberta Library Association Conference in Red Deer and at the Canadian Library Association Conference in Winnipeg. Throughout the year, several members of the staff, under the leadership of Mr. Harland and Mr. Baird, continued the project of drafting standards for Canadian university and college libraries.

Library Committee and Sub-Committee

The Library Sub-Committee's membership was increased from seven to eight. During the year twelve meetings of the Committee were held, and in addition a special ad hoc committee was called together on September 4th to consider the desirability of purchasing two library collections offered to us.

Library Administration

The fulfilment of three years of planning came in the fall of 1963, with the opening of the library on the Calgary campus, the Education Library wing, and the D. E. Cameron Library. The Librarian gratefully acknowledges the assistance he has received from his two assistants, Mr. Sidney Harland and Mr. Donald Baird, and from Mr. William Wood of the Provincial Architects Branch, in the details of planning and furnishing.

Order Department

Miss Lillian Leversedge, Order Librarian, comments that as the Library moves into the purchasing of larger quantities of older out-of-print books and foreign language materials, the pre-order checking becomes more time-consuming and more difficult, and that it may become necessary to give up high standards of

bibliographical accuracy and to accept as a consequence an overlapping or duplication of titles ordered. The number of series on standing order continues to grow and now accounts for \$28,000 of the book budget. At the beginning of the year, to round out the Undergraduate collection by a September deadline, a separate staff was set to work on the ordering of books for this collection; the arrangements was not entirely successful.

In the year under review book ordering increased by 25%. The Library ordered 30,108 book titles in 40,151 volumes, and received 28,437 titles in 39,436 volumes. By way of gifts and free materials, the Library was the recipient of 1,593 volumes. Thus, the total of volumes received was 41,029. In addition, the Library added micromaterials. The Order Librarian points out that about a thousand of the requisitions received from teaching departments each month are found to be for books already in our collection.

Cataloguing Department

Miss Yvonne Fenton, newly appointed Chief Cataloguer, in her first report also records a larger quantity of materials processed. The department catalogued 20,756 monographic titles in 38,144 volumes; 193 serial titles in 3,325 volumes, and 322 titles of micromaterial. The typing staff was responsible for the processing of 323,649 cards for the catalogues of the Library system; this was about twice the number prepared the previous year and was brought about by the setting up of new catalogues as described below.

The amount of work in altering book and catalogue records in any rearranging of a library collection is seldom appreciated by those uninitiated in the tasks of a cataloguing department. During the summer this department was involved in a number of pre-move projects. In preparation for the consolidation of the general and applied science collections remaining in the main library, it was necessary to transfer approximately 9,800 titles to the Applied Science Library (which then became the Science Library). At the same time some 8,000 titles on all subjects were selected from the main stack collection for retention in the Rutherford Undergraduate Library. Both projects meant the preparation of a duplicate catalogue, and the changing of location marks on all cards for these titles in the union catalogue. In addition, something in the order of 6,000 titles were purchased and catalogued for the Undergraduate Library. When the move was made to the Cameron Library, a formidable task was the moving of the card catalogue, which contained about 800,000 cards; this involved extending the contents from the 675 drawers of the old cabinet into 840 in the new; Miss Fenton commends the team which, under the able leadership of Mr. Peter Hanlon, accomplished the transfer in only four days.

While the flow of new books steadily increased, for a time the number of professional cataloguers decreased with the resignation of Mr. Reicher, the Chief Cataloguer, in August, Mr. Neilsen in October, and Mrs. Lupton in November. Some replacements were added, but the department has had one professional vacancy unfilled since September, and another since December—a serious situation in a year of extra tasks and heavy acquisitions.

Periodicals Department

Dr. William Whiteley, in his first report as Periodicals Librarian, states that in April the department took over from the Cataloguing Department the responsibility for cataloguing both new periodicals titles and bound volumes as these are received back from binderies. Mrs. Spurr, Periodicals Records Librarian, catalogued 673 new titles and 7,535 added volumes; she also continued work on the revision of the Library's central periodicals holdings record.

The Library placed 627 additional subscriptions this year as compared with 490 added last year. We subscribe to 3,923 periodicals and in addition receive gratis 941 journals, to make a total of 4,864 periodicals titles regularly entered. The average periodical cost continues to rise, particularly for science journals; Russian translation journals are usually the costliest at about \$100 each per annum.

In recent years, a major part of the work of this department has been the ordering of back files of periodicals. The amount diverted from the book fund for the

purchase of files of periodicals has increased each year: in 1963-64 \$92,000 was so spent. Over and above this amount, the Library expended \$40,000 for the purchase of a collection of scientific periodicals made available in England when an industrial library was offered for sale, and divided it about equally between the Edmonton and Calgary branches of the Library. In the humanities and social sciences, our periodicals holdings were strengthened by the purchase in reprints of long runs of several English and American literary magazines, a long file of the *Gazette des Beaux Arts*, and back files of several standard journals in history and political science. Our coverage of 19th century Canadian newspapers was expanded by purchases of files on microfilm.

Another phase of the department's acquisitions program has been the systematic searching of duplicate exchange lists; through this source 2,836 single issues, 38 bound volumes, and 56 books were obtained. Our library is a member of the United States Book Exchange. The Library uses the *Alberta Journal of Educational Research* in its exchange programme to obtain American and English educational periodicals. However, our exchange programme is hampered by the fact that the University does not publish any scientific journal which might be used for exchange with institutions, particularly those in the Orient, which only make their publications available through exchange.

Bindery Preparation Unit

Mr. Alan Rankin, binding supervisor, sent out 6,427 volumes to be bound, or 305 less than the previous years. Of these volumes two-thirds were journals, one-sixth books and another sixth check-binds. In addition, this unit repaired 239 books and pam-bound 381 pamphlets. The expenditure in binding was \$35,234.90, an increase of approximately \$2,000 over the previous year.

Photocopy Service

A Xerox 914 was obtained in December, 1962, to copy Library materials, particularly articles from periodicals. Because of the arrangement with the College of Physicians and Surgeons of Alberta mentioned elsewhere, the heaviest use by far is to copy medical materials. During the year under review 108,312 pages of xerox were turned out.

Circulation Department

The Circulation Librarian, Miss Norma Freifield, in presenting her report, has found it necessary to present it in two parts, that relating to the period from April 1st to November 30th and a second part relating to the operation of her department in the Cameron Library from December 1st to April 1st. This division is necessary because of the radical changes in organization and fields of responsibility of the department. In the Rutherford Library, Miss Freifield had charge, in addition to the Circulation Department, of the Reserve Reading Room; the latter remained in the Rutherford Library. Before the move the pure sciences were part of the main stack collection under her jurisdiction; these were transferred to the new General Sciences Department. In the new Library, the micro-materials and the photocopying unit were added to the Circulation Department. In addition, the strategic location of the Main Circulation Desk in the Cameron Library has increased its importance.

Reporting on the period to November 30th, Miss Freifield points out that circulation of books from the stacks was 63,056 or an increase of 12% over the whole of the previous year. In the last four months of the year the circulation of books was 46,350, down about 20% from the previous year; the accessibility of books for immediate use in the Cameron Library was undoubtedly a factor in the decrease.

The Circulation Librarian reports that the new system of charging out books is an improvement over our former system in that the books get back to the stacks more quickly, the process of sorting recalls is speeded up, the borrower's name printed on the card is legible. The disadvantage is mainly that the borrower has to take longer to fill out the transaction card.

Reference Library

Miss Margaret Auxier, in her first report as head of the Reference Department, explains that with the move to the Cameron Library the department terminated its

responsibility for circulating materials such as art books, rare books, Canadiana, and microforms; and further, that with the transfer of scientific reference materials to the General Sciences floor, the Reference Library is now restricted to a collection for the humanities and social sciences. As the circulating materials were not removed until the university session was two-thirds over, the department still recorded 11,789 borrowing transactions. The number of questions answered in the department declined somewhat at 5,960, but the number of complex search questions increased over the previous year, and is interpreted as an indication of increased use of the reference services by senior and graduate students in the new Library.

Our library resources continue to be supplemented through the extensive use of inter-library loans for faculty and graduate students. During the year, 331 faculty members and 235 graduate students received 1,376 bound volumes and 934 microforms from other institutions. Increasingly, other institutions are borrowing from our Library, an indication of the growing research nature of our collection; 487 volumes and 175 microforms. The demands for theses written at Alberta doubled over the previous year with 113 theses being loaned.

In the year under review, the Library's collection of documents was increased by 24,991 publications, as compared with 18,332 documents added the previous year. The number of documents borrowed from the collection, 2,687, was a decrease by 22% over the number borrowed the previous year. Since for the first time our document collection has been easily accessible to students, our interpretation of this decrease is that students are using the documents in the Documents Room.

Miss Auxier notes that the eight members on the staff of the Reference and Documents area at the beginning of the year she was the only one still on staff at year's end. Miss Auxier must be commended for the level of reference service maintained in view of the shortage of professional staff in the department during the latter part of the year.

General Sciences Library

A significant change in the organization of our material has been the consolidation of the applied sciences and the general sciences in the main Library. In the Rutherford Library the division led to unnecessary duplication in the two areas, and to some confusion for users of scientific materials. Early in the spring, in anticipation of the move to the Cameron Library, the transfer of bound journals from the main stacks, and of new acquisitions, to the Applied Science Reading Room began and continued until the move. The transfer was not achieved without problems as the records for the science catalogue were often weeks behind the arrival of volumes. While these temporary difficulties placed science library staff under stress, and put users of scientific materials to inconvenience, the consolidation is pleasing to everyone.

In addition to the extra shelving and filing of catalogue cards caused by the consolidation of the collections, the staff completed a number of other tasks. The Science Librarian, Mrs. Emma MacDonald, was responsible for the selection of a science collection for the Undergraduate Library. The general science collection added 2,352 documents and 539 standards, and some 9,750 revision sheets which were filed into looseleaf reference indexes.

The circulation for the year was 28,182, an increase of 21%. The Librarian reports that the cessation of automatic circulation of journals to teaching departments and staff has been a happy decision, with most borrowers finding the new arrangement more convenient for systematic literature searches.

Medical Library

The report of the Medical Librarian, Miss Phyllis Russell, like last year's report, contains references to the policy of curtailing the use of journals to the Library, and of providing as an alternative to circulation a xerox service. From February to February xerox copies of journal articles were provided free to all members of the College of Physicians and Surgeons of Alberta, but as costs were getting out of control, the amount of free xeroxing had to be further limited. It will be recalled that the College of Physicians has for the second successive year provided a generous grant to the Library in return for service. Under the arrangement, 1,208 requests

were xeroxed free of charge, another 935 requests were xeroxed on receipt of payment; a request might run from several to a score of pages.

An effort was made to fill in back files of medical periodicals, with \$9,680 being spent for this purpose. In addition, \$1,000 has been earmarked for the purchase of back issues of dental periodicals. During the year the Medical Library staff completed the indexing of *Ciba Symposia*, and of the *Alberta Medical Bulletin*.

The Medical Library circulated 23,767 books, and 10,420 journals. The decrease of over 6,000 in circulation figures was due to the curtailment of journal circulation and also to the new open stack system in the Cameron Library. Approximately 11% of the circulation was to doctors in the city and province; 70% of the reference service was given to doctors as distinct from students.

The attendance was 97,624, a substantial increase over the previous year.

The Medical Library added 1,113 books and 775 bound periodical volumes during the year. Through the Medical Library Association Exchange, 1,232 items, mostly single issues of periodicals, were added.

Rare Books and Archives

In the past the Library has had a rare book collection but has not had any organization for the collecting, care and supervision of its rare books and archives. The increasing number of valuable books being added to the Library and the organization on the campus of an Archives Committee with a view to instituting an active programme of collecting personal papers and manuscripts, made it imperative that a librarian or curator be appointed. With the move to the Cameron Library where space had been provided, Miss D. I. Hamilton was placed in charge of rare books and archives.

In December, Miss Hamilton visited rare book collections and archives in the Toronto-Ottawa-Montreal area. Since then she has been engaged in organizing materials and making records. The university archives are now arranged in a logical way following the Cornell Library scheme. Some manuscript material, such as the J. N. Wallace collection has been sorted, but much remains to be done. The Librarian has undertaken to collect pictures of the faculty in conjunction with the Faculty Club which will display pictures of staff here from 1908 to 1940.

Rutherford Undergraduate Library

In preparation for the setting up of an Undergraduate Library collection, the advice of teaching departments was sought during the summer in the selection from the main book collection of titles to be retained in the Rutherford Library.

Later, while the move to the Cameron Library was under way, several of the men on the staff worked evenings to collect the selected books out of the main stack collection; previously there had been no shelving available on which to segregate these volumes.

Additional books were selected, ordered, and processed with a view to rounding out the undergraduate collection in most disciplines. The collection contains over 15,000 volumes, mostly duplicates of well-used titles also in the Cameron Library.

As stated elsewhere, the Undergraduate Library could not operate effectively because of the dislocation occasioned by the major renovation taking place in the building. Unsupervised reading rooms, though far from conducive to study with plaster dust about and no ventilation fans on, were popular with students when kept open until midnight seven days of the week from mid-January.

Reserve Reading Room

The Reserve Reading Room has operated in the same pattern as before under the able supervision of Mrs. Hanka Bednarski. The circulation for the year was 59,256, an increase of 13%. The attendance was 125,000, a decrease of 16%, presumably because of more study space available elsewhere.

Law Library

In his annual report, Mr. Noden states that 2,683 volumes were added to the collection, of which 1,959 were reports. The collection was substantially strengthened by the addition of four units of the National Reporter thus completing the system

except for the Federal Rules Decisions. Four sets of Australian reports represent the principal series added during the year.

In December when many of the Library services had moved to the Cameron Library, the Law Library was able to expand into the former Medical Reading Room and stacks. Considerable benefit has accrued; not only has the congestion of the book shelves been alleviated by the availability of one floor of the stack block, but in the new reading room regulations about noise and tidiness are being respected. The Law Librarian reports that material is still being taken out of the Library without being properly charged out, especially while student assistants are supervising. The Librarian also reports difficulty in the processing of law materials, because it fails to fit neatly into the standard categories in ordering and cataloguing.

Although the registration in the Faculty of Law remains about constant, the attendance in the Law Reading Room was up by about 8% to 40,175. The same was true of the circulation of material, some 17,473 transactions, or an increase over the previous year of 34%.

Education Library

The Education Librarian, Miss Moira English, states that in the Library wing of the new Education Building perhaps the most appreciated feature is the separate periodicals room. During the year several meetings of a Curriculum Laboratory Committee were held to discuss the content and function of the newly organized Curriculum Laboratory.

In preparation for the organization of the Curriculum Laboratory in the new library quarters, the Education Librarian early in the year made a selection of volumes from the main collection for housing in the Curriculum area. Cards for each title assigned had to be withdrawn from the catalogue, duplicated for a card record in the Curriculum Laboratory, and then a location mark stamped on the first cards before they were refiled in the main Education Library catalogue. The Education Librarian reports other projects such as sending material in May to the Banff Conference on Educational Leadership, and in July to the Leadership Courses for School Principals offered at Concordia College, and in September to out-of-town centres offering Evening Credit Courses.

The new Education Library has been heavily used. The turnstiles have been recording about 40,000 ingresses per month. In view of the improved facilities and larger seating capacity, it is not surprising to find that the attendance has increased markedly from that of the previous year.

The circulation of books was 116,596, but as the Library is now operating under the open stack system, there is no doubt that the book collection is receiving greater use than the 16% increase in circulation would suggest.

Physical Sciences Library

Mrs. Marjorie Corah, supervisor, reports that the third year of the Physical Sciences Reading Room has been a successful one. The most noteworthy feature reported is the decline in attendance by over 22,000, or 42%; this library, intended primarily for senior students in Chemistry, Mathematics, and Physics, has been used by large numbers of other students who attend classes in the Physical Sciences building. Fortunately, with the opening of other new libraries on the campus, the crowding of the Physical Sciences Library has come to an end. The Library is in continual use throughout the year because the post-doctoral fellows and graduate students are at work in the building throughout the summer months. The circulation of books for the year was 9,902, an increase of 20%.

PROFESSIONAL ACTIVITIES OF THE LIBRARY STAFF

University of Alberta, 1963-64

Abbreviations used

Alta. L.A. —Alberta Library Association

A.L.A. —American Library Association

A.A.S.U.A.E. —Association of the Academic Staff of the University of Alberta,
Edmonton Campus

- C.A.C.U.L. —Canadian Association of College and University Libraries
 C.A.U.T. —Canadian Association of University Teachers
 E.L.A. —Edmonton Library Association
 U.P.L.G. —University Professional Librarians Group

AUXIER, Margaret. *Member:* Alta. L.A., A.L.A. (Resources and Tech. Services Div., and Assoc. of College & Research Libraries), C.L.A. (Ref. Sect.), E.L.A., A.A.S.U.A.E. *Lectures and papers:* Orientation talks to students.

BEDNARSKI, Hanka. *Member:* Alta. L.A., C.L.A., Program Convenor, E.L.A., U.P.L.G., A.A.S.U.A.E., Faculty Club, Faculty Women's Club (International Friendship Group), The Graduates Society of McGill University.

BERTRAM, Sheila.

BULMER, Michael.

ENGLISH, Moira. *Member:* Secretary, Alta. L.A. *University Activities:* Education Library Committee, Curriculum Laboratory Committee. *Lectures:* Several talks and tours of library to graduate students and some undergraduate classes (at request of individual professors).

FARNELL, Margaret. *Member:* Alta. L.A., C.L.A., A.A.S.U.A.E. *Lectures:* Jan. 25, 1964, addressed graduate students in Education on inter-library loan procedures.

FENTON, Yvonne. *Member:* Library Assoc. (Great Britain). *Lectures:* 15 minute lectures on use of catalogue given to freshmen in September.

FREIFIELD, Norma. *Member:* Alta. L.A. (Recruitment Com.), A.L.A. (Assoc. of College & Research Libraries, and Resources & Tech. Services Div.), C.L.A. (University Lib. Standards Committee), C.A.C.U.L., E.L.A., A.A.S.U.A.E., C.A.U.T. Delta Kappa Gamma Society International—Second Vice-President. *Attended:* Alta. L.A. Conference in Red Deer, C.L.A. Conference in Winnipeg. *Lectures:* Eight lectures during registration week to freshmen on the use of the library; three talks on the library profession to high school library clubs at Bonnie Doon Composite, Eastglen, and Queen Elizabeth High Schools; one career talk on the library profession at Eastglen High School; three tours of the Cameron Library for high school pupils.

HAMILTON, Dorothy. *Member:* Alta. L.A., Bibliographical Soc. of Canada, C.L.A. (Ref. Sect., University Lib. Standards Committee), C.A.C.U.L. *University Activities:* Visited Rare Books and Archives Libraries in Eastern Canada, Dec. 13, 1963–Jan. 3, 1964. *Attended:* Alta. L.A. Conference in Red Deer, C.L.A. Conference in Winnipeg.

HANLON, Peter. *Member:* Alta. L.A., C.L.A., President, E.L.A.

HARLAND, Sidney. *Member:* Vice-President, A.L.A. (Legislative Committee), C.L.A. (Chairman, University Library Standards Committee), C.A.C.U.L. (Executive Committee), Library Assoc. (Great Britain), Secretary, U.P.L.G., A.A.S.U.A.E., Faculty Club, attended Alta. L.A. Conference in Red Deer, C.L.A. Conference in Winnipeg. *Lectures:* "Planning a University Library" to Edmonton Library Association, February, 1964.

HOWELL, Leila.

HYRAK, Wasyl. *Member:* E.L.A., Treasurer, U.P.L.G., Canadian Assoc. of Slavists. *Other Activities:* President, Edmonton Branch, Canadian League for Ukraine's Liberation.

KANTAUTAS, Adam. *Member:* Alta. L.A., A.L.A. (Assoc. of College & Research Libraries, and Acquisitions Sect.), C.L.A. (Cataloguing Sect.), C.A.C.U.L., E.L.A., President, U.P.L.G., Treasurer, Philosophical Society and Humanities Association, A.A.S.U.A.E., Faculty Club. *Other Activities:* President, Canadian Lithuanian Federation, North Alberta Branch. *Attended:* Alta. L.A. Conference in Red Deer.

LASJOWSKI, Seno. *Member:* E.L.A. *Publications:* "The Alfred Wiener Collection of Modern German History" in University of Alberta Library Staff Bulletin.

LEVERSEDGE, Lilian. *Member:* Alta. L.A., A.L.A. (Assoc. of College & Research Libraries, and Resources and Tech. Service Div.), C.L.A. (University Library Standards Committee), C.A.C.U.L., E.L.A.

MacDONALD, Emma. *Member:* Alta. L.A., A.L.A., C.L.A., International Assoc. of Agricultural Librarians & Documentalists, Special Libraries Association, A.A.S.U.A.E., C.A.U.T.

MIELKE, Frances. *Member:* A.L.A.

NODEN, Denys.

PEEL, Bruce. *Member:* Alta. L.A., A.L.A., C.L.A. (Scholarship Committee, Consultant to University Library Standards Committee), National Research Council of Canada's Associate Committee on Scientific Information, Canadian Historical Association Committee on Local History Awards (Alta. Chairman), Government of Alberta Advisory Committee on Historic Sites. *Attended:* C.L.A. Conference

- in Winnipeg, National Research Council of Canada's Associate Committee on Scientific Information in Ottawa. *Publications: A Bibliography of the Prairie Provinces: Supplement*. Toronto, Toronto University Press, 1963; "Alberta Builds Three", *Library Journal*, v. 88, no. 21, Dec. 1963 (Architectural Number); "University of Alberta Library", *Planning Library Buildings for Service*, Proceedings of Building and Equipment Institute, Kent State University, July 6-8, 1961. Chicago, 1964; "Early Mission Presses in Alberta", *Leisure*: v. 6, no. 1, Jan., 1964 (Reprinted from the Alberta Library Association Bulletin, Nov. 1963); also three book reviews. *Lectures: T.V.-Script and Narrative—"Steamboats on the Saskatchewan"*, a half-hour programme on the Western Heritage Series shown by CFRN-TV in the summer of 1963, and repeated in the spring of 1964.
- RALETICH, Ivana. *Member: Alta. L.A., C.L.A., International Association of Agricultural Librarians & Documentalists, A.A.S.U.A.E., C.A.U.T. Attended: Alta L.A. Conference in Red Deer.*
- RUSSELL, Phyllis. *Member: Alta. L.A. (Recruitment Committee), C.L.A. (University Library Standards Committee), E.L.A., Medical Library Assoc., Special Library Assoc., A.A.S.U.A.E. University Activities: Medical Library Committee, Dental Library Committee. Attended: Alta. L.A. Conference in Red Deer, International Congress of Medical Librarians in Washington, D.C., C.L.A. Conference in Winnipeg. Lectures: Three talks to high school students on librarianships as a career.*
- SPURR, Barbara.
- SUCHOWERSKY, Celestin. *Member: Alta. L.A., Canada Association of Slavists, Secretary, E.L.A., U.P.L.G. Other Activities: Vice-President, Dominion Executive of Ukrainian National Federation, Vice-President, Dominion Executive of Ukrainian War Veterans' Association. Attended: Congress of Canadian Association of Slavists at Laval University.*
- VOICE, Margaret. *Lectures: Freshmen tour lectures. Career day talk—Queen Elizabeth Composite High School.*
- WHITELEY, William. *Member: E.L.A., C.L.A., C.A.C.U.L., Canadian Historical Association, A.A.S.U.A.E. Publications: "The Establishment of the Moravian Mission in Labrador and British Policy, 1763-83" Canadian Historical Review, March, 1964, pp. 29-50.*

Report of Professor A. A. Ryan, Provost

The year 1963-64 has been marked by intense activity in student affairs and a sense that established patterns are giving way in the face of revolutionary changes in the make-up of the University itself. At the same time, student government has never been more maturely responsible in its efforts to anticipate and overcome the problems brought about by the University's explosive growth.

The Students' Council, under the very able leadership of Mr. Wesley Cragg and Miss Eleanor Johns, President and Vice-President of the Students' Union, has been faced with a series of challenges beginning with the sponsorship in September of the most successful Congress to date of the National Federation of Canadian University Students. The major preoccupation of the Students' Council during the first term was, however, the pushing to completion of the initial stages of the planning of the proposed new Students' Union Building. This project was presented to the Board of Governors and the Provincial Cabinet and won approval in principle. Later in the year the project was the subject of a resurgence of critical interest on the part of a large segment of the student body, who felt that the Students' Union Building Planning Commission had lost touch with them in the latter stages of planning. A hotly contested election in March was won by Mr. Francis Saville, who pledged a complete investigation and review of the whole project. Significantly, this campaign pledge was not only immediately kept, but the new Students' Council has set about their review in a positive way which will undoubtedly lead to an improvement of the plans for the building, not a destructive attack on the immense amount of work already done by their predecessors. Interest in the project has been Canada-wide, and the Provost was invited to a Conference on College Unions at Waterloo University in November to speak on this unique student-initiated venture. To prepare for the operation of the new building the Students' Union has appointed Mr. Marvin Swenson, Assistant Director of the Union at Washington State University, as Program Adviser. He will take office in the fall.

In the residences, the year 1963-64 marked the end of an era and the beginning of a new one. With the opening of Lister Hall in November, 1963, and the admission

of the first convention guests to the new residence towers in May, 1964, Athabasca and Pembina Halls were reconverted to single rooms and thrown open for the first time to graduate students, particularly those from abroad, and Assiniboia Hall was abandoned as a residence hall and converted to temporary office use. The efforts of the Board of Governors to arrive at a new board and room rate which would make possible the partial repayment of the principal cost of the new residence complex led to considerable student unrest, which was magnified by the student newspaper the *Gateway*, and became the subject of some debate in the Provincial Legislature. A report on how the residence rates were finally arrived at has been prepared by the Office of the Bursar and is appended to the report of the Director of Housing.

The University's first Director of Housing, Mr. George Tauzer, who took office in August 1963, has set up a very efficient system for the operation of the residences old and new. He has also taken over the listing service for off-campus housing. Beginning in July 1964, he will be assisted by Mr. Joel Stoneham in the new office of Director of Food Services. The new residence complex has aroused international interest, and was the subject of a feature display at the National Association of College and University Housing Officers at the University of California at Los Angeles in August, 1963. It is to be displayed again in 1964 at the Association's annual meeting at the University of Michigan. The students and staff in residence are planning enthusiastically for the full opening of the buildings during the Summer and Fall sessions. Meanwhile the first conventions to use the new facilities have been highly complimentary.

The general pattern of organized student activities on campus has remained substantially unchanged during the year, and there were no major disciplinary problems. A highlight of the athletic program was the winning by the Golden Bears Football team of not only the Western Intercollegiate Championship but the unofficial Canadian Intercollegiate Championship in an East-West playoff against Queens' University. It is hoped that events of this kind will assist in bringing about an increased awareness of one another on the part of the student bodies on the various campuses.

The fraternity system during the year has continued to show a new vitality. The Interfraternity Council has taken full responsibility for the actions of its member chapters. Three new chapters, two men's and one women's, are in the process of organization.

The title of Major R. C. W. Hooper, Adviser to Men Students, was changed to Dean of Men to reflect more truly his growing responsibilities. He will continue also as Foreign Student Adviser. Both he and the Dean of Women, Mrs. J. Grant Sparling, have been unstinting in their devotion to the welfare of the students on Campus.

The Provost was invited to present a paper on the planning of student residences at the annual meeting of the Student Affairs Division of the University Counselling and Placement Service in Halifax in June, and was elected President of the Division for the coming year.

Report of Mrs. J. Grant Sparling, Dean of Women

During the summer months the stage is set for the incoming first year women through contacts with grade twelve teachers, parents wishing information, the winter session planning with Wauneita and Panhellenic executives. There is a close liaison with the Summer Session Council and a limited number of these students consult with this office. The international women arrive and need assistance in many areas. Endless requests for recommendation are received from business and other universities as our graduates seek employment or proceed to further study in other centres.

One thousand and twenty-seven first-year women registered in September. Nine hundred and twenty-three came to the office for information, for an interpretation of university and to learn the resources available. There is a continuous referral to the specialized services such as Health, Student Awards, Counselling and Employment. Three hundred and twenty-two upper-class women consulted with us as did the chairman of special events committees for assistance in their planning.

Garneau House for sixteen first year students opened in September with Miss Hilda Reason as warden; University House under Dr. Gladys Freeman, Pembina Hall with Miss Martha Munz, now Senior Resident of the new residence and Pembina Hall with Miss Ruth Bradshaw as warden have provided excellent university adjustments for new students. We are grateful to these wardens for their sensitivity and awareness. Pembina Hall will continue as a residence for international women and upper-class students twenty-one years or older. Miss Ruth Bradshaw has consented to be the Senior Faculty Adviser and there will be a minimum of regulations—only those needed for the comfort and well-being of the resident community.

The new women's residence will solve many accommodation problems. It is staffed with upper-class women, many of whom had campus residence experience, and the good and gracious traditions of Pembina should be continued.

The Wauneita Society (all women students are members) made a significant contribution under the Presidency of Miss Catherine Whelihan and the Honorary President, Mrs. H. S. Armstrong. The well organized Big and Little Sister Programme provided the incoming students with personal assistance and this is essential as enrolment increases and students from the smaller schools feel the anonymity of being but a number. The society's events were successful. One thousand and one hundred women attended the Initiation, 850 the Big and Little Sister Party when three addresses were given (a) Graciousness In University Living—Mrs. Walter H. Johns; (b) Academic Achievement—Mrs. W. F. Bowker; (c) Personal Health and A Code of Ethics—Dr. Margaret Hutton. The two Dr. Vant lectures, increasingly important because of the publicity on "The New Morality", overflowed Convocation Hall. For the next year these will have a different pattern and will be delivered in the Jubilee Auditorium. To Dr. Vant we say "Thank you" for the service he so willingly volunteers. The Wauneita Formal, held in the Jubilee Auditorium and the gracious social event of the year, was attended by 750 women students and their escorts. The Wauneita Lounge was filled for Dr. Yonge's lecture, "Marriage,—Wholly, Holey or Holy". A noon hour programme of special films was shown in the Wauneita Lounge and are planned for the non-resident women. These provide discussion and thinking material beyond the confines of study courses. The Wauneita Society interprets University to prospective grade twelve students from the province during Varsity Guest Weekend and assists the new students at six first-week coffee parties. The Wauneita executive and the upper-class women give many hours of service in helping fellow students.

The off-campus residence supervisors of St. John's Institute, St. Jude's, Brescia Hall, the Nurses' Residence, the three fraternity House Mothers and the University Wardens met together twice during the year to discuss standards and procedures. The Dean of Women is invited to meet the students in these residences. It is with regret that the Order of the Ursulines has been compelled to close Brescia Hall and Mary Manor. For the past few years these two houses accommodated twenty-eight incoming students from the northern areas of the province and the atmosphere provided and the careful observance of study hours has produced outstanding results in academic attainment and self-development.

The Delta Kappa Chapter of the Alpha Gamma Delta Fraternity was established on this campus February 29, 1964. The national officers visited on several occasions to give specialized assistance, a residence has been rented and this fraternity should be on a firm basis. The national officers of the established fraternities visited their chapters, reviewed the academic standings, the social standards, and the management of the houses with the Dean of Women. The fraternity women continue to give excellent leadership, maintain high standards and are an integral part of the University. This year we have departed from a former pattern and one house mother is a senior graduate proceeding to a doctorate degree and with experience in student contacts. It has been a successful experiment and a second such appointment has been made.

There is a close contact with the office by the many religious groups on the campus and these with the Varsity Christian Fellowship and the Student Christian

Movement keep the altar lights burning in the shadow of a far too materialistic world and provide for some serious dialogue between Christianity and the secular academic disciplines.

The Queen's Contests—Block "A", Engineering, Education and Golden Bowl—were well managed by the committees in charge. The regulations and standards for these campaigns have been set from suggestions received from the Queen's candidates of the past three years.

Five women volunteered through the Indian and Eskimo Association and the Department of Northern Affairs for summer work with the Indian and Eskimo people at Inuvik, Fort Smith, Fort Resolution and the Moravian Town Reserve. They served in recreation, adoption and social assistance schemes. The Department of Northern Affairs arranged for the Dean of Women to visit three of the projects so that we might evaluate the work accomplished and the orientation that should be given to students accepting such appointments. Our women derive much personal benefit from this involvement with the native peoples and interpret the needs and the work being done by the departments and will prepare our student body to understand and assist the Indian and Eskimo students who are entering the University.

We thank Mrs. R. S. Eaton who accompanied the Mixed Chorus on three concert tours and others who accepted the responsibility for inter-university events. The Dean of Women travelled with the Cheer Leaders' Corps to Vancouver, participated in the Student Christian Movement Orientation Course and the International Christmas Group, both centered in the Banff School of Fine Arts.

The Dean of Women is an adviser by invitation to the Graduate Wives and Student Wives Associations. One thousand and fifty-four married men and 170 married women full time students attended the University. Student marriages are increasing and present specific areas of concern. The future family life of these couples is threatened by the special tensions of financial strain, inadequate housing, limited time for husband-wife companionship, reversal of support role, the deferment or fear of pregnancy, the lack of community foundations and the distance from the security and the guidance of family. These two student associations, through friendship, interpretation and interest programmes are providing some solution for some of the above problems and should be given support.

The health of our students has been reasonably good and excellent care is given by the Student Health Service. A sponsor system for students with certain disabilities, diabetes and epilepsy, was established and will continue.

This year brought an underlying restlessness and a searching for meaning in the student body with little fun or laughter to give a balance—a trend reported from almost every university on the continent. On this campus developed a new sense of student-responsibility for the well being of other students and this is being encouraged. There was evidence, too, of an overwhelming drive for academic attainment.

We express our deep appreciation to Mrs. Webster, our efficient and understanding Secretary, who gives to the persons entering our office a feeling of ease. Without her assistance and co-operation it would be impossible to meet the many demands.

Seventy-eight public addresses were given to campus and off-campus organizations.

The Dean of Women attended the annual meeting of the National Association of Women Deans and Counsellors. This conference provides the opportunity for consultation with Deans of Women, with National Panhellenic Officers, and with the specialists involved in the personal counselling of University women while they are on the campus and preparing for their future—the home or the professions.

Report of Major R. C. W. Hooper, Dean of Men and Foreign Student Adviser

The utmost co-operation was enjoyed with the Students' Council and its ancillary organizations. While Students' Council devoted much of its work to planning the new Students' Union Building, it also made a study of its system of government and modified its structure so as to provide for a better representation of the student body,

and to decrease the load on the members of the Council. Certain student groups such as the Golden Key Society and the Varsity Guest Weekend committee have been brought directly under the Union and their funds incorporated in the Students' Union budget. To improve communication between the various clubs the Union set up a Programme Board. To give more financial flexibility the Union abolished its rigid fee structure. It also made its views known on certain external problems such as R.C.M.P. investigations on campus, University government, civic government, academic affairs, and the Canadian Union of Students.

With the graduation of most of the executive and the implementation of the new Constitution, the Graduate Students' Association suffered a period of disruption and is in the process of reorganization. A compulsory membership fee has been approved by the Board of Governors and the new Constitution was approved by the Committee on Student Affairs. This should resolve many of the difficulties which have been encountered in the past. The Welcome Committee of the Association did excellent work in meeting the new arrivals and assisting them to settle in their new environment. To assist in the alleviation of the acute housing shortage, arrangements were made with the Airlines Hotel to accommodate graduate students at rates comparable to those paid by students living in the University residences. This has worked satisfactorily and an average of thirty-five students have been accommodated. A similar arrangement was made with the Savoy Plaza Hotel to accommodate married students and those who could not be accommodated at the Airlines.

Two new additions have been made to the fraternity community with the establishing of colonies for the Delta Sigma Phi and the Theta Chi fraternities. It is hoped that by next year they will be able to achieve active chapter status and receive their charter.

The student parking problem continues to grow. More than 2,900 student vehicles were registered this year. The regulation of traffic and parking by a system of stall rentals and traffic tickets has kept the situation from being chaotic, but students are increasingly making use of adjacent streets for parking.

About 3,000 lost "articles" have been turned in at the Patrol Office. About half of these have been reclaimed. Those not reclaimed have been put on public auction and the proceeds turned over to the World University Service.

There have been no serious breaches of discipline during the year though the automatic gates on the parking lot south of the Students' Union continue to be a target for vandals and dissident students.

Foreign Student Affairs

With foreign students now numbering 235 the office of the Foreign Student Adviser has been called on to handle an increasing number of problems from the simple extension of a visa to serious emotional disturbances. Such groups as the Golden Key Society, the World University Service, the Faculty Wives International Friendship Group, and the Junior Chamber of Commerce, the I.O.D.E., the Overseas League, and the Southside Rotary Club of Edmonton have given invaluable assistance in the reception and orientation of foreign students and in the provision of hospitality for them. Club International continued to be a valuable focus of interest for an active group of foreign and Canadian students and interested citizens.

The Foreign Student Adviser attended the annual convention of the National Association of Foreign Student Affairs held in Minneapolis in the Spring. While on vacation he had the opportunity of visiting seven British Universities for the purpose of investigating student government, student housing, and the handling of foreign student problems. These visits were made under the auspices of the British Council.

Report of Mr. George Tauzer, Director of Housing

The first eight months of operation of the Housing and Food Service Department has progressed according to schedule.

The Housing Office was set up to function as a complete University housing service with the capacity to expand to serve any anticipated future enrolment.

The off-campus listing service was moved from the Counselling Service Office to the Housing Office in Lister Hall in September.

All summer students registering for the 1964 *Summer Session* are being contacted by mail and informed of the residence facilities available to them during their stay at the University. During the summer all rooms will be single occupancy.

Fifteen conferences of various sizes were booked into the residence facilities for the periods when the area was not to be used by regular students.

Notices of housing information available to incoming students for 1964-65 was mailed from the Registrar's Office with all acknowledgements of application for admission. It is anticipated that there will be full occupancy by next year.

Lister Hall completed a trial period of operation and is now fully furnished and ready for utilization of all facilities.

The Women's Residence Building went into operation on May 2nd with the first conference of fifty men moving into the tenth floor. The Men's Residence Building went into operation in June.

Staff

The Housing Office staff is composed of the Director, his Secretary, an Accountant, a Housing Clerk and Assistant, and Supervisor of Maintenance. Seventeen men and thirty women are full-time caretakers for the physical facilities. Approximately thirty part-time students will also be used in the overall operation. Mr. Joel Stoneham will take office as Director of Food Services on July 1, 1964.

Reports on the new food service operations and on the setting of board and room rates, are appended.

Food Services Operation in Lister Hall—Miss Margaret Shaw, Dietitian

The Food Services Building, Lister Hall, opened on November 1, 1963. On opening day 1,243 customers were served. Between November 1, 1963 and March 31, 1964, 98,913 cash customers and 3,500 banquet and party customers had been served, for a total of 102,413 customers.

In addition, University functions were catered for at other locations on campus and in the Jubilee Auditorium. The first resident convention group was catered to in May.

Lister Hall won a First Award for superlative achievement in the 18th Institutions Magazine Food Service Award Contest. This was the only First Award made to a University in this international contest and the only award to a Canadian institution. The kitchen was designed by Dr. E. L. Empey, Director of the School of Household Economics, and Miss Eleanor Cairns, Dietitian of the University Cafeteria, in consultation with Fred Schmid Associates of Los Angeles. Mr. D. Menzies of the Architectural Branch, Department of Public Works, was project architect.

The kitchen is also being used for teaching senior students in Institutional Management in the Household Economics Department.

RATES FOR ROOM AND BOARD IN STUDENT RESIDENCES— OFFICE OF THE BURSAR

This report on student residences, with particular reference to the rates for room and board to be effective September 1st, 1964, is included at the request of the Legislature of the Province of Alberta.

Student accommodation in University residences on the Edmonton campus has been limited since about 1920 to the three halls, Athabasca, Assiniboia and Pembina, which have recently housed under conditions of post-war crowding some 350 men and 160 women. This number was perhaps adequate when the enrolment was much smaller but for the present term, 1963-64, it represented only about 5% of the total student body or some 10% of those students living outside the City who required accommodation for the University term. In 1962 plans were made and arrangements completed for the construction of two new residences together with a food services building to be financed largely by means of a C.M.H.C. loan. Total financing is at this time on the following basis:

C.M.H.C. Loan — 50 years at 5½%	\$3,320,000
Canada Council Grant	1,900,000
Provincial Government Advance	500,000
Provincial Government Grant for Furnishings	600,000

Actually the facilities of the food services building now completed are sufficient to provide for another similar residence in the same complex and this was included in the original planning. The two residences are also now ready for occupancy and will house 600 in each. A third residence to house a further 600 to 900 students will ensure a more economic operation. In the interim period the food services building, called Lister Hall, will provide food services to about 500 non-resident University students and staff.

In considering rates for room and board the University had in mind that the revenue produced should provide some recovery of capital costs although it seemed evident from studies made that complete recovery of both capital and operating costs might not be possible. Rates at other Canadian Universities and some American Universities were obtained and compared and a rate was fixed at \$90 monthly for single rooms and \$82 for double rooms for the year 1964-65.

Report of Mr. R. B. Wishart, Administrator of Student Awards

The operations of this Department have followed the usual pattern during 1963-64.

University awards have been made at the three levels—matriculation, undergraduate and postgraduate. Joint meetings have been held with a number of outside donors who receive applications direct. This is done in order to avoid duplication of major awards to any one student. Awards of \$100 or greater currently offered either through the University or through outside donors are approximately as follows:

	Number	Value
Matriculation	199	\$106,500
Undergraduate	221	641,000
Postgraduate	51	96,600

During the year about 35 new awards (of \$100 or greater) have been offered to and accepted by the University. Against this 12 have been terminated or withdrawn. In a number of cases values of awards have been increased by donors or terms clarified. Several substantial bequests have been received, the proceeds from which will be used for scholarships.

We continue to act as a clearing house for information about many awards tenable elsewhere and in some cases do the initial processing of applications. We arrange such things as the German Academic Exchange Scholarships, the C.U.S. Exchange Scholarships, students coming to us through the African Students Foundation, etc. We are also responsible on this campus for selection of applicants for Canadian University Service Overseas.

Assistance through the Provincial Students Assistance Act continues at a very substantial level. Total for 1963-64 were approximately:

	No. of Students	Amount
Queen Elizabeth Scholarships (Matriculation and Undergraduate)	600	\$137,200
Scholarships and Fellowships (Graduate Studies)	13	36,500
Grants and Bursaries	2,264	422,377
Loans	2,553	819,340
Tuition Grants to Students in Education	1,112	191,425

Allowing for overlapping the number of students involved would be between 3,000 and 4,000. The special Tuition Grants in Education are being eliminated by stages and the total for these for 1964-65 may not exceed about \$30,000.

Collaboration between the University and the Students Assistance Board continues on a close and effective basis.

In the interests of economy and efficiency we have been able to simplify some of the procedures of the Student Awards office and to eliminate one or two time-consuming operations.

Report of Student Counselling Service

Staff

At the present time the staff consists of five counsellors and four clerks. Three of the counsellors hold part-time appointments in teaching departments, and another teaches a special course for dental assistants and girls in the R.N. program in the University Hospital School of Nursing, which does not belong to any teaching department. In September Mr. Donald Fair will return to the staff, after completing the work for his doctoral degree at the University of Minnesota. Mrs. Watson will leave the staff at that time. We have advertised for a replacement for her, and there are funds in the budget to permit the employment of that person from June 1st, so that if we have any luck we will have six persons on staff beginning with that date, or soon thereafter.

Counselling Load

In reporting to the previous Committee, Dr. Rempel chose to use figures for the period September 1st to August 31st. If one follows his example it is found that in the period September 1, 1962 to August 31, 1963 some 3,431 interviews were granted in contrast with 2,971 in the previous year, an increase of 15.5%. I note that in the period September 1, 1963 to March 31, 1964, the number of interviews had increased by 19.8% over the previous similar period. Both of these percentages exceed the percentage increase in enrolment but apart from stating that one factor is that more prospective students are being seen than ever before, I would wish to discuss other implications later in the report.

Career Events

Members of the counselling staff took part in the usual number of career events in Edmonton and other school divisions, some 55 in all. There has been a change in the extent of participation by the Department of Education, but since the matter appears to be in hand, I will not discuss it unless you wish.

Study Skill Tutorials

These tutorials were offered in November and were attended by some 800 odd freshmen, an increase over the previous year.

Research

Because of the heavy pressure of interviewing, little if any research was done. We had provision in our budget for a research assistant, but could not obtain one. I am hoping that we can have one for the next session, for my own research in prediction is showing considerable promise.

Counsellor Training Program

While this matter has been under consideration for some years, and although it is my understanding that there is need for the completion of the agreement between the Departments of Educational Psychology and Psychology before plans are fully developed, I am hoping that our facilities may be used in practicum training for graduate students in Educational Psychology and in Clinical Psychology. Our interviewing offices are wired so that tape recordings of interviews can be made, and we use this for staff up-grading and it could be used for training.

General

First of all, I would like to express the hope that this Committee will exist not only to advise General Faculty Council in matters of policy for Student Counselling Services, but that it will also serve as a body I can turn to when I need certain kinds of advice. In this I think particularly of seeking to understand overall University policy, an example of which will be brought to your attention in the following pages. Still further, I would hope that it will provide a means for frank and open discussion in matters that may be of concern to any or to all of you. Indeed, in this I would like to express the hope that any Dean or Director who is worried about any of the reports coming from Student Counselling Services, or who is concerned about rumors he has heard of things that have been done or said, would get in touch with me. I have not yet had time to institute a plan of my own which will, I think, help me to know more of what is happening in Student Counselling Services

than I presently do, but since I do not foresee the possibility of doing more than spot checks, I would welcome comments at any time. If those of you who are members of Deans' Council would be good enough to make this known to your colleagues on that Council, I would be most appreciative.

However, I do have a developing situation in which I would appreciate your advice, or, at the least, would wish to test my ideas against yours. It may even be that there is need for a general university policy in the matter.

It has to do with the extent to which treatment, and, in particular, mental health treatment, should be made available to university students. Since it seems likely that most mental ill health was largely developed prior to admission to University, even if events at the University may sometimes seem to precipitate some of the more startling manifestations of such illness, one could argue that no student should come to University unless he is in good mental health. Having in mind the amount of psychiatric and psychological services available to the general public, I cannot imagine that this could ever be made mandatory, at least not for many years. Still further, it might be borne in mind that the incidence of serious mental illnesses is lower among the student population than among the general public. Still further, we find that the essential causes of a good many of the cases of academic difficulty have their roots in personality problems of one sort or another. Some of these problems are not severe enough to be classed as illnesses. And still further, it has been found, both here and elsewhere, that the recovery rate of university students is faster and that treatment can be much shorter than for persons in the general population. Additionally, we have found that it is possible to 'save' a goodly number of those who are in danger of academic failure through provision for counselling at Student Counselling Service and, in the more extreme cases, referral to the Department of Psychiatry. Lastly, I would emphasize that those who are helped do not fall within the range of border-line students. Indeed, it is my experience that I can do my best work with those who have considerable academic potential.

During the past 18 months we have found it increasingly difficult to make quick referrals to the Department of Psychiatry unless the illness is quite extreme. The waiting period for an appointment has been anywhere from six weeks to three months. That period of waiting is long enough to seriously interfere with academic functioning.

Partly because of this, and for a number of other reasons, our counsellors have tended to become increasingly involved in the treatment of students with personality problems. It accounts for no small part of the increase in the counselling load. Additionally, success brings more customers, and that adds to the situation. Still further, some of the psychiatrists in some cases prescribe medication in order to afford temporary control, and then refer the students back to us for treatment.

In April I approached Dr. Yonge and Dr. Elliott with the suggestion that the time had come to employ a part-time psychiatrist at Student Health Service. This was agreed to, but because of the long-range system of budgeting, no provision can be made until after April, 1965. We had had some hope that we might obtain part-time assistance on a fee-for-service basis, but seemingly it is not possible to do so.

In this, it might also be borne in mind that it costs far more to employ a psychiatrist than it does to employ a clinical or counselling psychologist. I was informed that a full-time psychiatrist with a few years of experience would be likely to require a minimum income of some \$15,000 a year beyond office and secretarial expenses. We can employ an experienced clinical or counselling psychologist at a beginning salary of from \$9,000 to \$10,000 per annum.

At the moment there does not appear to be any clear University policy for any of the health services. As may be expected under such circumstances there is a tendency for expansion, but not always a planned or coordinated expansion. Indeed, it is difficult to set firm limits, and one of the reasons for this is to be found in the professional attitudes of medical practitioners, dental practitioners, psychologists, and so forth. It is the simple question of whether it is ever ethical to refuse treatment if one finds that a person could benefit from it. Hence, I think that both in Student Health Service and in Student Counselling Service there is a natural

tendency to seek to provide treatment when it is thought that the person could benefit. The essential question is that of who should pay for it, the university? the individual? society at large? Of course, insofar as Student Health Service is concerned it is presumably supported out of a proportion of the tuition fee, although now that no separate fee is charged, it is less difficult to argue that the student pays for the medical services he receives. I suppose that one could argue that in the same way the student pays for some of the services provided by Student Counselling Services. However, I would think that one could not justify an open door policy of treatment on that basis.

To my way of thinking the best policy is likely to relate to the essential function of the University or of a university, namely that of providing higher education for those who are admitted. Hence, it may be legitimate for the University to provide services that would enable some students to benefit to a greater extent from the opportunities made available to them. Hence, just as it would be ridiculous to assume that the University should assume all responsibility for a student who develops tuberculosis and is hospitalized for months and even years, just so it cannot assume responsibility for long-term treatment, whether on-campus or off-campus. It could provide short-term treatment and emergency treatment. The real test would be that of whether the treatment would contribute to the scholarly efficiency of the student. If so, in some special cases, fairly extensive treatment might be warranted. I would think that this should only be provided when there is good reason for believing that the student has above average potential, and, additionally, when the treatment can be provided without interfering with the regular functioning of the service concerned.

Since the question is a difficult one, but at the same time bears directly on the planning which I must do for Student Counselling Services, I would welcome your suggestions and ideas. Perhaps there is a need for the University to develop a policy in the matter.

Report of Dr. J. F. Elliott, Director, Student Health Service

The 1963-64 term has been an eventful one for the Student Health Service. This has been the second term in our new building, and the planning that was done for this building has continued to prove its value.

Emotional and adjustment problems of students continue to be a major area of concern. Close cooperation continues with Dr. K. Yonge, head of the Department of Psychiatry at the University Hospital, and with his staff. It is hoped that the services of a psychiatrist, whose main responsibility will be to the Student Health Service, will be obtained in the future.

Closer liaison has developed with the Student Counselling Service. When new space is provided for this service it is believed that it would be to the mutual advantage of both services for their building to be adjacent or communicating with the present Student Health Service Building.

Close cooperation has continued with the University Hospital, and the use of its emergency department, X-ray and laboratory facilities, and consulting staff has been of great value. The hospital now supplies us with a part-time laboratory technician and a part-time pharmacist who attend during sick parade hours.

This year an I.B.M. card has been filled out by the student and completed by the physician for each visit to the Health Service. Useful information concerning types and origins of illnesses in the student body may be made available. The co-operation of Mr. R. Banks of Data Processing has been of great help in instituting this system.

A new record and filing system using the student's university number is being introduced and will facilitate the handling of files.

The sick parade has been efficiently conducted by Dr. R. W. Sherbaniuk and his staff of resident physicians. We have been particularly fortunate this year in the calibre and devotion of this group. Dr. Sherbaniuk has continued to act as medical consultant, as well as Chief Physician. This year he attended the annual meeting

of the American College Health Association in Denver, and brought back many stimulating ideas.

Dr. S. Greenhill has continued in his post as Assistant Director, and medical consultant. His services have been of great value, particularly regarding adjustment problems.

Dr. Margaret Hutton has continued to act as consultant in gynaecology, and her work load has continued to increase.

Doctors E. G. Kidd, L. E. MacLeod and R. E. Rossall have attended as consultants in medicine, and have been most helpful.

Doctors Greenhill and Sherbaniuk have been designated as a planning committee to advise on charges and space requirements that will become necessary in future years as the student population increases.

The Child Health Program has continued and grown under the expert direction of Dr. K. Swallow. As the federal grant for this project ends in 1965 a committee has been studying its future and is submitting a report.

Miss Revell, and her assistant, Mrs. Taylor, and the nursing staff have continued to provide excellent nursing service for in-patients, and for students attending sick parade. Mrs. Ward has continued to supervise the treatment room. The nursing staff have also contributed much to the clerical work necessary for the I.B.M. cards and the new filing system that is being introduced.

Mrs. Strynacka, our office supervisor, and her assistant have continued to provide excellent service.

Increases in staff have been made as necessary.

I would like to thank the President, the University Administration, and the committee on Student Health Service for their continuing cooperation and encouragement.

Report of Mr. Guy Vaughan, Radio Director

General Resume — Music

Broadcasting for the year 1963-64 was for the period October 1st, 1963 to April 30, 1964.

The same broadcasting hours as in the 1962-63 season were utilized—6:45 to 8:00 p.m., Monday through Friday, and 8:00 to 9:00 p.m. on Saturdays. For the remainder of the year, programs of recorded music were broadcast one hour per day six days per week.

From May 1st, 1963, to April 30th, 1964, two hundred and sixty-one recorded Music Hours were broadcast as well as 52 Saturday Evening Concerts, making a total of 313 hour-long music broadcasts during the year.

Following the pattern of 1962-63, Organ Recitals were broadcast once per month during 1963-64 and were included on the last Tuesday of each month in the regular Music Hour period, that is, from 7:20 to 7:45 p.m. There were 7 Organ recitals during 1963-64.

There were also 14 Western Board of Music Recitals during 1963-64. These were aired from 5:30 to 6:00 p.m. on Saturday afternoons.

Talks Series

During the current season, 135 15-minute programs of talks were aired. Of these regular series, *Science* had 40, *Social Science* 29, *Men and Letters* 24, *Two on the Aisle* 21, and *Extension* 13. the remaining programs consisted of the following groups—*Education* 4, *Campus Preview* 2, and *Miscellaneous* 2.

Highlights of the 40 *Science* programs were various series like *The Mind*, *The Family and The Community* (3), *Highlights of the Plant Kingdom* (4), *Modern Mathematics* (4), and *Our Tiniest Enemies* (2).

In the *Social Science* programs, the departments of Political Economy, History, Psychology, Sociology and Philosophy were responsible for the following noteworthy series—*Canadian Government* (2), *International Affairs* (4), *The Family and Society* (4) and *Courtship and the Market Place* (2).

In the English Department series, *Men and Letters*, a general pattern of *Great Works of Literature* was followed during 1963-64. Noteworthy among these were: *Shakespeare: Winter's Tale—Fielding: Tom Jones—Bunyan: Pilgrim's Progress—Sophocles: Oedipus Rex—and Chaucer: Canterbury Tales.*

The program—*Two on the Aisle*—offering critical opinion of professional music and drama in Edmonton, as well as noteworthy current movies, continued to find a ready audience.

The *Extension Department* was responsible for a series of 12 programs covering the General Heading—*Extension Reaches Everywhere*. Many facets of the Extension Department were covered in this series.

As is customary each year, two 15-minute programs dealing with matters of interest to prospective students, were also broadcast. These programs, under the general title—*Campus Preview*—were arranged and aired by staff members of the Students' Counselling Service.

In addition to the above, during the month of April 1964, four 15-minute programs on *Educational Topics*, arranged by the Faculty of Education, were broadcast.

Panel Discussions

Following the pattern established during the 1961-62 season, a series of 31 weekly Panel Discussions (commencing on October 2nd) were broadcast on Wednesday evenings from 10:30 to 11:00 p.m. over CKUA. Both Professors and Graduate Students took part in the series, in which a wide variety of topics was covered. Again this year, four of our Panel Discussions were requested from Winnipeg and re-broadcast by the CBC.

Daytime Programs Over CKUA

The experiment successfully launched in 1957-58 of repeating some of the University's best talks of the regular evening series during the daytime period, was continued during the 1963-64 season. Results, as in previous years, were gratifying, thanks to the generous co-operation of the management of CKUA.

Distribution of Talks—1963-64

During 1963-64, the following 15-minute Talks and one-half hour Panel Discussions emanating from the University of Alberta were rebroadcast by other stations.

	½-hour Panel Discussions	15-minute Talks
CBC—Networks	4	33
CJBC—Toronto .....	.....	9
CJCA—Edmonton .....	.....	13
Totals	4	55
	—	—

Announcers-Operators

Herb Johnson gave excellent service as Chief Announcer of Broadcasting Services, as did Jon Whyte and Gerald Manning, who completed the staff of Announcer-Operators.

Television—1963-64

CFRN-TV

Due to a CTV Network commitment, the CFRN-TV series—*Your University Speaks*—which for the two previous years had commenced in October, did not begin until February, 1964. However, the series of lecture-style programs by individual professors ran until the end of June with some fine television personalities emerging among the professors who took part in the series. Co-operation from the administration, directors and technical staff of CFRN-TV was again excellent, the professors participating being loud in their praise of the courtesy and consideration received at all times from all members of the CFRN-TV staff.

CBXT

Again this year, negotiations are continuing with CBXT relative to a University TV Series but with no finite result as yet.

TV Special Events and Spot News

Both CFRN-TV and CBXT during 1963-64 again used personnel from the University of Alberta on several occasions. Film clips of special events connected with the University were constantly aired on main newscasts of the two TV stations. In addition several members of the academic staff were used individually in both interviews and panels of various kinds on numerous occasions.

Future Plans for Broadcasting Services

During 1963-64, two sub-committees of the main University Committee on Broadcasting, consisting of 5 members each, one for radio and the other for television, were formed. The Radio sub-committee is to be chaired by Mr. Frank Bueckert of the Drama Division and the TV sub-committee by Dr. Grant Davy of the Department of Political Science.

The main functions of these two sub-committees are to aid the Director of Broadcasting Services in the development of plans for improvements in the operation of Broadcasting Services together with the formulation of plans and suggestions for expansion. Both these sub-committees, of course, report any conclusions or plans to the Main Committee for decision.

Just prior to the completion of this Report for the Board of Governors, a preliminary meeting of the sub-committee on Radio was held on July 14th. Besides an overall look at the operation of Broadcasting Services, plans for future expansion were also tabled.

Appendices to Director of Broadcasting Service's Report for the year 1963-64

Talks and Panel Series

The summer months of 1963 were again utilized for the planning and gathering of program material for the Fall and Winter of 1963-64.

Commitments for more than half of the 135 talks for 1963-64 and several of the 32 panel discussions were tabled with the University Committee on Broadcasting meeting in October 1963. These were also submitted to the CBC, Winnipeg, at that time for preliminary perusal and selection.

During the 1963-64 season, liaison between the Director of Broadcasting Services and the CBC was continued. Copies of all scripts were being forwarded continuously to the CBC immediately after being aired by us, so that a steady flow of CBC re-broadcasts might be maintained. Results may be seen in the main portion of this report under the heading—Distribution of Talks and Panel Discussions.

Distribution of Talks (see also "Distribution of talks and panel discussions" in main portion of this report)

During the 1963-64 season, liaison was established with Radio Station CJBC in Toronto, which took 9 of our 15 minute talks. However CJBC is, we understand, to become a French language outlet so that further liaison has been eliminated.

With the sole exception of Radio Station CJCA, Edmonton, which, for the third year in succession used some of our University talks, the response to re-broadcast talks and panels of the University of Alberta by private stations was again meagre. Reason given by several of the private stations was heavy network affiliation with the CBC covering what was described as similar programs to those of the University of Alberta.

Revenue From Tape Distribution

A total of \$65.00 was collected from all private stations on the basis of \$5.00 per tape during 1963-64.

Advertising and Promotion

Again this year, 10,000 pamphlets in the University colours and covering the overall programming schedule were distributed in Edmonton homes. The pamphlets, in addition to general program information, gave the University Broadcasting Services' address and phone number, with a suggestion to join the University's regular mailing list for program schedules. Response has been very gratifying.

For rural listeners, a 3-column 3-inch advertisement was placed for four consecutive weeks in each of 20 weekly newspapers. These advertisements, besides giving general program information, also invited new listeners for our mailing list. In this case also, response was good.

In the matter of daily promotion for our talks programs, CKUA has been most co-operative, airing promotion for our daily talks several times per day.

New Equipment and Improvements

Budget appropriations have been passed to restock the Broadcasting Services Record Library with Lp records to replace the old 78's which were fast becoming unfit for broadcasting. The appropriation calls for restocking at the rate of \$1,000 worth of Lp records per year for 5 years. Already, about 70 percent of the first year's supply has been received and timed.

In addition, a new Ampex Tape-Recorder to replace the old Magnecord which did such yeoman service over the past several years, has been ordered and received. It will make a substantial improvement in the quality of our talks and panels.

Furthermore, in keeping with modern trends and due to the rather drab appearance of the Broadcasting Services Studio and its unalluring effect on speakers of both the University and the public, another appropriation has been passed to improve conditions. A new speakers' table, six executive chairs, wall-to-wall carpeting, some drapes, a long utility table and a repainting of the studio to match the general decor, will undoubtedly present a more appealing atmosphere for the airing of talks and panels.

Students' Radio Society

A complete report of the activities of Radio Society is attached.

Report of J. A. Brook, Vice-President U of A Radio

The year 1963-64 has been a good year for U of A Radio in important ways. Many departments made advances in the quality and amount of their contribution to the radio arts and sciences. Greater structural stability in each department and for the club as a whole came with these advances.

The year began with the beginning of Summer School. We broadcast five hours a night, six nights a week for the summer school students. Though we concentrated on quiet evening music, we also presented Summer School news and activities over the closed circuit speakers that act as our transmitter.

The annual Summer Conference for the incoming radio executive followed hard on Summer School Radio. This is one of our most valuable institutions, and was ably chaired this year by Production Manager Les McLeod. Without the redefinition of duties and goals achieved by this conference, we could not have made the advances we have made this year.

The summer conference put us in a strong position for the beginning of term, and our recruiting program was the most successful yet. This, I trust, will be reflected in the strength of the club over the next few years. More than 75% of our recruits fit immediately into some job, so this knotty problem was smoothed over, and the year began very well.

The confidence that continued strong executives have gained with Students' Council, resulted in our being granted our full \$2,600.00. The most detailed budget presented by any organization to Council was largely prepared by Vice-President J. A. Brook. Major capital expenditures included an Ampex 601 Tape Recorder, a McCurdy Turntable, an Oscilloscope, a Tone Generator. We also built an FM-quality audio console (for \$250.00). We have held some money in reserve for second-hand equipment that we hope will come up for sale by year-end.

The new SUB and our position in the project occupied considerable time. We hope to be granted facilities sufficient to the needs of a complete, albeit small, radio station. This is in line with our long-term goal to obtain permission from the BBG to allow us FM broadcasting rights. In any case, such facilities will serve well as a student production center until this time. Through the facilities of the CAB, WAB and local stations, we have gained a considerable potential

audience for such productions. The new SUB is an activity that will concern the club over the next few years.

There were some advances made in our relationship to FM broadcasting. The Canadian Union of Students took an interest in our cause for the first time in a good number of years, and our representative, Mr. Dan Thachuk, carried a brief with him on this trip to CUS headquarters. Though nothing positive came of it, the interest of CUS in this project is encouraging. We also began exchanges of information and programs with eastern student stations, some of which have either their own transmitters or else have guaranteed outlets through other stations. U of A Radio also communicated with the Department of Transport, and though we accomplished nothing more than building a very large file of rules and regulations, we learned a great deal about the problems that face us.

We are members of the Western Association of University Broadcasters, and associate members of the private stations' association, the Western Association of Broadcasters. The WAUB had a successful year, with one notable exception. WAUB-level attempts to develop some relationship with the CBC met no positive response. U of A Radio can report however, that our attempts locally have met with far greater success, and all our advances have received the greatest possible co-operation commensurate with the Corporation's internal regulations.

Public Relations for the Students' Union was one of our greatest areas of service this year. The publicity gained through our efforts for VGW alone has been valued in terms of commercial radio rates at \$5,000.00; this was repeated on a lesser scale for many other events. About 9,000 people toured our studios during VGW. V-Day, the Friday of VGW, saw us for the fifth year in succession, co-operate with CFRN Radio and this year for the first time, Television, was an unreserved success. The advance in quality of announcing and the amount of information broadcast, is, I feel, cause for just pride.

On campus, we as usual broadcast news of campus events. Through CKUA, we broadcast two regular programs, on campus, (for the fourth year), and from the Performing Arts, a classical music program entirely made up of recitals by U of A student musicians. There is a possibility that this program will be distributed across Canada by the CAB.

We instituted a public-address service this year, and it proved so popular that we have made it an executive department. This service was used about 65 times and resulted in a small overall profit.

During the year, we extended our speaker system to the new Education Building, at the request and with the financial assistance of the EUS, and we are negotiating with the Armed Services Committee and with St. Joseph's House Committee, both of whom have requested our service.

During the summer, we are making every attempt to find new ways to meet our most pressing problem; that is, how to gain a large and listening student audience.

U of A Radio, I think, has had a successful year.

Report of Professor R. S. Eaton of the Western Board of Music

1. Statistics (Candidates and Fees)

Candidates:	February	May	June	Total
Practical	232	.....	1,290	1,522
Theoretical	491	696	.....	1,187
				<hr/> 2,709
Fees:				
February		\$ 2,547.50		
May, June and September (special theory)		9,112.68		
		<hr/> \$11,660.18		\$11,660.18

This shows an increase of 7 candidates from 1962 and a decrease in fees of \$22.22.
(Special September examinations included in the above totals).

2. <i>Revenue from the Sale of Theory Papers</i> (December 1, 1962 to November 30, 1963)	250.77
Total Revenue	<u>\$11,910.95</u>

3. 1963 Centres

(a) *Practical:*

February: (4) Edmonton, Calgary, Red Deer, Lethbridge.

June: (29) Beverlodge, Berwyn, Blairmore, Bonnyville, Bowden, CALGARY, Castor, Coleman, College Heights Dawson Creek, Donnelly, EDMONTON, Falher, Girouxville, Glendon, Grande Prairie, Innisfail, LETHBRIDGE, McLennan, Peace River, Pincher Creek, Ponoka, RED DEER, St. Paul, Sexsmith, Spirit River, Three Hills, Westlock, Wetaskiwin.

(b) *Theoretical:*

February: 40 centres

May: 39 centres

September: 2 centres

4. 1963 Examiners for Practical Examinations

February: Mr. Lyell Gustin, Saskatoon; Mr. Jan Van der Gucht, Regina; Mrs. Mary Fenwick, Calgary; and from Edmonton—Mr. G. K. Greene, Mr. Robert Pounder, Mr. Thomas Rolston, Mr. Alan Smith, Mr. Jean Pierre Vetter and Professor R. S. Eaton.

June: Mr. John Melnyk, Winnipeg; Mr. Boyd McDonald and Miss Dorothy Overholt of Saskatoon; Mr. Jan Van der Gucht, Regina; Mrs. Mary Fenwick, Calgary; and from Edmonton—Mr. Hugh Bancroft, Capt. A. Brown, Mr. Ernest Dalwood, Mr. G. K. Greene, Miss Sandra Munn, Mr. Robert Pounder, Mr. Jean Pierre Vetter and Professor R. S. Eaton.

5. 1963 Diplomas Granted

Spring Convocation:

A.Mus. (Piano): William Hugh Laycock
Neil Kenneth Moran*
Nadia Olynyk*

Fall Convocation:

L.Mus. (Piano): Robert Bruce Cockell*
A.Mus. (Piano): Eileen Sandra Erdman
Marian Diane Train
Marilyn Ohlhauser
Gerald Fredrick Manning
Karol Anderson
Nancy Louise Goodman

6. *Broadcasting (from January 5, 1962, to March 30, 1963)*

Broadcasts of music illustrating the Western Board of Music syllabus continued in 1963 at the time of 5:30 p.m. Saturdays.

The following recitals were broadcast:

January 5	Piano	Lillian Upright
12	Violin	Robert Klose
19	Clarinet	Ernest Dalwood
26	Piano	Marilyn Ohlhauser

(Professor Crighton accompanied Mr. Klose and Mr. Dalwood)

February 2	Soprano	Erin Wood
9	Piano	Robert Cockell
16	Piano	Eva Kowalik
23	Violin	Mary Cockell

(Miss Joanne Dutka accompanied Mrs. Wood and Mr. Robert Cockell accompanied Mrs. Cockell)

*B.Mus. graduates.

March 2	Piano	Sandra Munn
9	Violin	Elaine Mossop
16	Organ	Arthur Crighton
23	Piano	Patricia Colvin
30	Piano	Jocelyn Pritchard
(Miss Patricia Colvin accompanied Miss Mossop)		

7. *Recitals*

Four recitals were held in 1963 instead of the usual five. This was due to lack of enough award winners in one area—Red Deer, and the area surrounding it.

The first recital took place on November 8th in Grande Prairie where there was a good audience and much enthusiasm. Prior to the 8:15 p.m. recital, our chairman, Miss Munn, presented certificates at an informal gathering at the convent; she and Miss Mossop played for the young students and this “extra” was greatly appreciated.

Lethbridge was the centre for the November 15th recital and, as usual, the audience was drawn from many southern Alberta towns. The Calgary and Edmonton recitals brought enthusiastic friends, relatives and teachers to encourage the student winners—the Calgary concert on November 22nd and the Edmonton recital on the 29th completed these occasions for 1963.

Professor Eaton presided at the Lethbridge, Calgary and Edmonton recitals. Guest artists were as follows:

Grande Prairie	Elaine Mossop, violinist, of Edmonton
Lethbridge	Lynn Barber, soprano, of Calgary
Calgary	Barbara McFerran, soprano, of Edmonton
Edmonton	Sandra Erdman, pianist, of Calgary

Guest speakers (who also presented the awards) were:

Grande Prairie	Dr. D. G. Cottrell, President, Allied Arts Council, Grande Prairie
Lethbridge	Mr. Clifford Harvey, Assistant Principal, Hamilton Junior High School, Lethbridge
Calgary	Mr. Walter Kaasa, Director, Recreation and Cultural Development Branch, Provincial Govt., Edmonton
Edmonton	Dean A. G. McCalla, Faculty of Graduate Studies, University of Alberta, Edmonton

8. 1963 *Awards*

SCHOLARSHIPS, BURSARIES, PRIZES and MEDALS

The value of awards this year (including medals) was close to \$5,000.00. There were some changes, one or two new awards and a reduction in one or two others.

The Provincial Government again increased their scholarship from one thousand to twelve hundred dollars.

Radio Station CFAC of Calgary have changed their award from \$100.00 to \$50.00 and the Fred M. G. Memorial Scholarship which was shown as \$150.00 in 1963 reverted to its usual \$100.00 this year.

NEW AWARDS

St. Joseph's School Board of Grande Prairie offered awards totalling \$200.00 in 1963, \$150.00 of which was awarded. The Grande Prairie Business and Professional Women's Club was listed among our awards this year; although they contributed in 1962, their new award was sent in too late for inclusion in the list.

Report of Mr. A. G. Markle, Alumni Executive Secretary

There are 26,000 members of Convocation and it is the responsibility of the General Alumni Association and the central office to maintain contact and communication with as many of them as possible.

The New Trail

The most successful medium for doing this is “The New Trail,” a quarterly University and Alumni publication, produced by the Alumni Executive Secretary, and printed on the campus. Close to 28,000 copies of the magazine were mailed to graduates, University staff, and Friends of the University in 1963-64.

The Alumni Fund

The major portion of Alumni Association programming is devoted annually to The Alumni Fund. From April 1st, 1963, to March 31, 1964, 2,101 alumni contributed a total of \$23,051.21 to the Fund. Of this, after campaign expenses and alumni programming charges had been met, an amount of \$4,000 was earmarked for the Alumni Residence Fund, two \$1,000 intersession graduate bursaries were approved; \$6,000 and \$2,000 were placed with libraries on the Edmonton and Calgary campuses respectively for the purchase of vitally needed library books; and \$2,086 was allocated as Alumni Fund surplus.

Total direct and indirect money contributions from The Alumni Fund to the University since the "giving" program was initiated in 1959 now amount to \$101,-475.09.

In the field the Association is assisted by 14 alumni branch and local committees who undertake varying programs under the direction of their own appointed or elected executives.

Report of Commander R. S. Van Alstine, Commanding Officer, University Naval Training Division

A very successful year was launched by a recruiting campaign which saw 26 applications received in competition for 8 vacancies. Since the University Book Store made use of the Armed Services Building during Registration Week, and the week immediately following, a maximum coverage of both first and second year students was easily obtained. Traffic past the recruiting displays was heavy during this period. A talk was given by a senior cadet at Activities Night, and ushers in uniform were provided for Freshman Introduction ceremonies. The presence of cadets in uniform at the first day of classes drew attention to the existence of a Naval unit on campus. Excellent press and television coverage was willingly given, and no doubt contributed much to the success of our recruiting program.

Interest remained high throughout the entire winter training period, with high attendance rates at both regular and special parades. Guest lecturers were used whenever possible, and the officers from HMCS NONSUCH contributed much in this area. There was only one failure in winter training, an indication of the time and effort put in by the cadets and instructors.

One first year cadet was released at his own request, two second year cadets for academic failure, and three third year cadets for personal reasons. While there were no transfers from UNTD to ROTP during this academic year, one cadet is at present contemplating this move. One applicant for the UNTD, who could not be enrolled due to quota restrictions, applied for entrance into the ROTP, and was successful.

A total of thirty cadets were borne during this academic year. Of these seven were ROTP, two were CTP, and the remaining twenty-one were UNTD. Two ROTP cadets had to be released due to academic failure. The two CTP cadets and one ROTP cadet graduated and have now joined the fleet. ROTP training posed no problems and a high esprit-de-corps has been shown by these cadets.

Several special parades were undertaken during the academic year. A Tri-Service parade and Memorial Service was held on November 11, 1963. Two Tri-Service lectures were held, both of which were well received by all three services. A Tri-Service Mess Dinner was held, and it is hoped that this will become an annual event. Varsity Guest Weekend was observed by the UNTD with a display manned by cadets. The official opening of the Armed Services Building was marked by a Tri-Service parade for which the UNTD provided a guard. Navy Week was the occasion for a television interview of one ROTP and one UNTD cadet. As in prior years, the Tri-Service Ball, held at Hamilton Gault Barracks, proved to be a huge success.

The official announcement by the Honourable Paul Hellyer, Minister of National Defence, that HMCS NONSUCH, the Edmonton Naval Division, was to be closed made it necessary for the UNTD to transfer the location of their parades to the campus. This was accomplished with little inconvenience on 27 January, 1964. Excellent training and administrative facilities are now being enjoyed in the new

Armed Services Building. The administrative base of this UNTD is now HMCS TECUMSEH in Calgary.

The morale of the cadets is high despite the uncertainty caused by the announcement of the closing of HMCS NONSUCH and of cutbacks in the RCNR. The period between the announcement of the decommissioning of NONSUCH and the announcement that the UNTD was not to be closed was marked by much foreboding, which was dispelled by the UNTD announcement. Considerable pride in their new campus accommodation has been shown by the cadets. Two training cruises to Europe during summer training 1964 has also been a morale builder. Announcements of improved training for UNTD cadets are being eagerly awaited and will no doubt be implemented within the very near future.

Report of Lt.-Col. C. Heath, Commanding Officer, University of Alberta Contingent, Canadian Officers Training Corps.

1. General

Furnishing of the Armed Services lounge is now complete, with the exception of the canteen and kitchen area, which it is hoped will be suitably equipped in the near future. These facilities have provided the necessary focal point to our campus service personnel.

The Contingent supplied sixty-seven subsidized and ROTP officer cadets as students and provided military training and experience to thirty-five students in the COTC.

2. COTC Recruiting

The Contingent filled fifteen vacancies of its quota from twenty applicants. This unit keenly felt the arbitrary manner in which enrolments were terminated without warning in late December.

Since it is the policy of this Contingent to defer enrolments as late as possible to ensure highest calibre candidates, it was only by coincidence and the personal support of the Area Commander, Brigadier G. C. Leech, that the Contingent enrolled the numbers shown. As this unit has endeavoured to develop a close link with the University, it is quite probable this link has been seriously weakened by the manner in which recruiting was terminated.

3. Contingent Officers

Capt. John Nicol, our detachment commander in Calgary, was promoted to the rank of Major. In addition, Capt. J. W. Fishbourne returned to the Canadian Army Supplementary Reserve, and was replaced as unit Paymaster by Capt. D. P. Brooks from the Bursars' office. Capt. P. M. F. Preston joined the Contingent to assist in instructional duties, while Lt. J. D. Neilson assumed the duties of unit training officer in the rank of Captain. Also, Cpl. P. E. Miles, the Contingent clerk, was replaced in April 1964, by Cpl. M. G. E. Lane.

4. COTC Calgary

Maj. J. Nicol continued to administer the Calgary section during the past academic year in an effective manner. Five ROTP officer cadets joined the detachment, bringing the total strength in Calgary to eleven cadets. Some training assistance was received from local Army units, with the balance being provided by guest lectures from University of Alberta, Calgary.

5. Training

As in the past, basically suitable COTC applicants were encouraged to attend theoretical phase lectures, with the result that the majority of these personnel received the bulk of the winter training. Limited instructional assistance was received from local Regular Army units, with the majority of the lectures being provided by Contingent officers and University staff. In this respect, Dr. W. C. Wonders, of the Geography Department, presented a most interesting military geography series of lectures to the cadets.

On March 3rd, 1964, the Contingent sponsored its first Tri-Service lecture in the Armed Services Building. Dr. C. Hobart of the Sociology Department was the guest

speaker with his subject as "The Lesson of Korea, Character and Responsibility". It was considered a lecture of this type would be timely for officer training personnel. The topic was well received and was followed by a lively discussion period.

Second Lt. J. A. Deines of our Calgary detachment, is training with the Fourth Canadian Infantry Brigade Group in Germany this summer. He is attached to the Royal Canadian Regiment there.

The official opening of the Armed Services Building was held on March 21, 1964. Dr. W. H. Johns took the salute and inspected the officer training units.

He was accompanied by the local senior Military representatives of the Navy, Army and Air Force.

At the request of the COTC Commanding Officers, Western Command scheduled a University Contingent officer refresher course at the Royal Canadian School of Military Engineering in Chilliwack during early June. This course was also attended by representatives from the Universities of Manitoba, Saskatchewan and British Columbia. Lt.-Col. C. Heath, Maj. W. A. D. Burns, Maj. R. C. W. Hooper, and Capt. J. D. Neilson represented this Contingent.

6. *Awards*

Students from this University were recipients of special awards as follows:

- a. Second Lt. M. G. McRae, RCDC, a student in fourth year dentistry, was selected as the 1963 third phase Honour Cadet at the Royal Canadian Dental Corps School at Camp Borden, Ontario; and
- b. Officer Cdt. M. A. Oppertshauser, COTC, was chosen as the best all-round first phase cadet at the Royal Canadian School of Signals at Barriefield, Ontario.

7. *Contingent Strength as of 31 May, 1964*

Contingent strength is as follows:

a. Contingent Officers	5
b. Attached Officers	3
c. COTC officers and cadets	35
d. ROTP and Subsidized officers	67
Total Strength	110

8. *Social Activities*

A most successful Contingent mess dinner was held at the Western Command Officers' Mess in October. This dinner was followed in April by an equally successful Tri-Service Mess dinner arranged by the R.C.A.F. University Squadron at R.C.A.F. Station, Namao. It is felt that functions of this nature are most beneficial to the military personnel concerned and will continue in the future.

The popular annual Tri-Service Ball, under Navy arrangements, was again successfully held at the Hamilton Gault Barracks. The committee must be commended for the very excellent and original decorations used at this function.

**Report of W/C B. E. Riedel, C.D., Commanding Officer,
107 University of Alberta Squadron, R.C.A.F.**

During the 1963-64 academic year the university squadron had a total enrolment of 83 officer cadets attending university in all faculties. This decrease from 105 during the 1962-63 term resulted from reduced quotas which were part of the general reduction in the armed services. The University of Alberta Squadron continues to be one of the largest of its kind in the country and as such, it plays a most important role in providing a flow of trained university graduates into the RCAF reserve or regular forces as commissioned officers.

The unit strength was enrolled in the following categories: 31 in the Regular Officer Training Plan; 14 Serving Airmen; 8 in the Undergraduate Medical Subsidization Plan and 30 in the University Reserve Training Plan.

The officer cadets attended 63 hours of instruction in weekly parades during the winter training session. The instruction for the first year students was intended to prepare them for entry into the Air Force, and for the second and third year students, the aim was to extend and amplify on knowledge acquired during the officer development phases of summer training.

The social activities of the squadron included the usual two mess dinners; the Tri-Service Ball and the Remembrance Day parade and service in Convocation Hall. In addition a very successful Tri-Service mess dinner was held at the Officers' Mess R.C.A.F. Station, Namao.

Another important event of the year was the official opening of the Armed Services Building on 21 March 1964. The excellent accommodation provided in this building has greatly improved the operation of the squadron, and has helped to promote the move toward tri-service operations in line with the trend in the armed services today. On two occasions a tri-service parade was arranged to attend lectures of common interest to all the services.

At the spring convocation, eighteen cadets graduated, nine of which are with the Regular Air Force and nine have joined the Supplementary Reserve. All received their Commissions. Of the nine in the regular force, 3 are Pilots, 1 is a Radio Navigator, 3 are Technical Officers and 2 are Medical Officers.

All the cadets have been employed at R.C.A.F. units during the summer months except two medical students who started their internship in June 1964. Five of the cadets were posted to units of No. 1 Air Division in Europe for summer employment. Twenty-eight first year cadets attended the Reserve Officers School in Centralia during May and June, where a total enrolment of 298 cadets from all the universities in Canada received basic instruction in the duties, requirements and responsibilities of junior officers. At this school, Officer Cadet Fleming placed first in the drill competition and Officer Cadet Blatherwick received the award for the best all-round cadet.

The staff of Primary Reserve Officers this year consisted of: S/L A. B. Crighton, Associate Professor of Music, who was absent on sabbatical leave, S/L F. R. Anton, Associate Professor of Political Economy at the University of Alberta, Calgary who was also absent for a portion of the year on sabbatical leave, F/L F. D. Blackley Professor of History; F/L A. D. Cairns, University Registrar, and F/O D. B. Murphy, a student in the Faculty of Law. Regular Force staff supporting the squadron were: F/L T. W. Pearce who was transferred in April and replaced by F/L W. R. Johnson, and the clerk, Corporal S. T. Slater. The support of the squadron by these regular force personnel and by the R.C.A.F. generally has continued to be excellent.

Report of Mr. D. D. Campbell, Director of the Department of Extension

I am pleased to present the fifty-first annual report of the Extension Activities of the University of Alberta.

In fulfilling its "general function of contributing to the educational and cultural advancement of the people of the province at large", the Department of Extension performs its role essentially in a collaborative-cooperative capacity. These collaborative activities are directed towards arranging opportunities for adults to continue their learning. More people want the advantages of higher learning and by facilitating such opportunities the Department of Extension helps the University fulfill adequately its educational mission to society. The rapidly changing conditions of the world around us stress the urgency of translating new knowledge into learning and new theory into practice.

The methods by which old and new knowledge and skills may be disseminated to the adult population are the chief concern of the University's Department of Extension. In consultation with our colleagues on the campus we seek to find ways in which the various Faculties and Departments can make their resources available to those not attending university. Through conferences, short courses, workshops and evening classes, the academic presents his material and his ideas to the practitioner and in this way develops an association which is mutually beneficial.

The communication between the university and the society it serves is often initiated by society as it responds to a need for more learning. Our collaboration with professional associations, industrial and business groups, agricultural interests and voluntary organizations develops rapidly in importance as they turn to the University to assist them in developing their own educational programs. In every instance the Department of Extension brings such groups into contact with the

appropriate Faculty or Department so that together a suitable course or conference can be arranged. The principle that the university should go to the people is a sound one; but provision must also be made for the people to come to the university—to come with their concerns, their requests, their suggestions. The Department of Extension provides this link.

Though a large part of the Extension program is designed to teach technical and professional skills, the vast changes in our society are stimulating a strong interest in the humanities and in the fine arts, through which studies people seek to find and to express themselves. Classes have never been so popular in philosophy, psychology, sociology, religion, painting and music. This traditional role of the university in keeping before society the best that has been thought and done in the world, is especially important in times of change and adjustment. Through a program of public affairs in which critical issues are explored and discussed and through studies in community development, citizens are prepared to take a fuller responsibility in influencing the events around them.

Since the need for continuing education is apparent in every segment of our society and since the university cannot possibly meet all of these needs, part of our responsibility is in encouraging and supporting the development of adult education by other agencies. It is gratifying to see the programs being developed by the Northern and Southern Institutes of Technology, by the Edmonton and Calgary School Boards and by the Junior Colleges. Efforts are being made to co-ordinate these programs so that the offerings will be balanced and comprehensive and related to the interests of the community.

The following report describes the activities of our staff members in keeping with the objectives just outlined.

Liberal Education

The wide variety of subjects offered in the evening class program in Edmonton and Calgary afford the adult an opportunity to gain an understanding of the field of his choice. Intensive and practical language classes, introductory and survey courses in philosophy, history, psychology, sociology and religion are standard offerings to which are added new subjects and new methods of presentation each year. An especially demanding course in Oral French was introduced with great success this year. Emphasis is on the spoken word and the students are required to attend two 2-hour sessions per week for a total of 130 hours of instruction. Classes were kept small, homework was assigned, and the response and learning were remarkable. This program is being expanded this year to accommodate both beginners and advanced students. New courses in philosophy have been added and the variety of subjects available in the social sciences has been increased.

In both Edmonton and Calgary the Department of Extension arranged conferences on behalf of the Royal Commission on Bilingualism and Biculturalism. The purpose of these conferences was to acquaint the public with the Commission's task and to hear preliminary statements by individuals and groups interested in the question. Public lectures and panels on "Quebec—Revolution or Renaissance" were arranged and, like the conferences, were well attended. A special course explaining the British North America Act was held in Edmonton for people from the various news media. In Calgary, in co-operation with the Canadian Institute of International Affairs, a series of lectures was held on critical issues around the world.

Many individuals prefer to pursue a subject in an atmosphere less formal than that provided by a classroom or a conference. The study-discussion program, known as the Living Library series, is especially suited to them since they cover a variety of interesting subjects and employ the group discussion method. The subjects, which require considerable independent reading by the students, include: The Ways of Mankind, The Ways of Justice, Basic Issues in World Politics, Discovering Modern Poetry, Looking at Modern Painting, Philosophy in the Mass Age, Great Religions of the World, An Introduction to the Humanities, Shakespeare and His Theatre, Canada in Folk Songs, Canada in World Affairs.

A series of lectures entitled "Forefronts of Science" was arranged to describe some of the recent significant advances in the following fields: botany, computing science, zoology, pharmacology, physics, chemistry, entomology, mathematics, physiology, micro-biology, genetics and psychology.

As a service to the many people in Edmonton and Calgary who are taking part in Great Books discussions, the Department of Extension arranged the third annual Great Books Institute at the Banff School of Fine Arts. The three days were spent in considering improved discussion methods and techniques.

For the fifth year the Department of Extension offered a high school enrichment program designed to develop further the interest which promising students have shown in various subject fields. The subjects this year were determined by a committee comprised of representatives of the various school systems in Edmonton, high school teachers, the Chamber of Commerce, the Faculties of Arts and Science, the Research Council of Alberta, the Northern Alberta Institute of Technology and the Department of Extension.

The program includes a lecture series on the following subjects: chemistry, physics, mathematics, biology, English, psychology, history, political economy, modern languages and business management; a workshop series arranged with the Research Council of Alberta in subjects as: Fossil Fauna of Alberta Ponds and Lakes, Structure of the Rocky Mountains, Functional Group Analysis by Gas Chromatography, Capsule Pipelines; a series of laboratory demonstrations in association with the Northern Alberta Institute of Technology on such subjects as: diesel mechanics, electronics, medical technology, automation. Four hundred and fifty students were involved in the program which required a staff of forty-five instructors.

Business, Professional and Technical Education

Those engaged in business and the professions and the various vocations appear to feel most urgently the need for continuing education in the form of refresher courses and retraining. This is reflected in the growing number and variety of courses offered in this field.

The largest single group, numbering twelve hundred students, is enrolled in the training program established in conjunction with the Society of Industrial and Cost Accountants of Alberta. Over forty courses are offered in Edmonton and Calgary in such subjects as accounting, industrial legislation, report writing, managerial statistics and economics.

The Management Development Program, now in its third year, offers seven courses in both Calgary and Edmonton. Some of the subjects covered are: managerial accounting, Canadian economic development, business organization and administration, business finance, personnel administration, commercial law, marketing and production management. Four hundred students were enrolled in the program and this year Certificates will be presented to the first group of students who have obtained the required standing in six courses.

The Public Administration Training Division which works in close co-operation with the Department of Political Science at the University and with the Provincial Department of Municipal Affairs, the Alberta Association of Municipal Districts, the Alberta Association of Municipal District Secretary-Treasurers, the Union of Alberta Municipalities and the Association of Assessing Officer of Alberta, provides in-service training to municipal employees. The courses are offered on a correspondence-tutorial basis. Each student is required to present himself for examination at the end of each academic year and to date two hundred and fifty-five students have received Certificates from the Division. There is a continuing demand to expand the offerings of this Division and next year it is hoped that a special one-year course in municipal planning can be arranged.

A three-year certificate course in Personnel Administration, presented in co-operation with the Faculty of Commerce and the Edmonton and Calgary Personnel Associations, continues to draw a good number of students. The certificate course in Real Estate is being redrafted and strengthened in consultation with the Alberta Real Estate Association.

In co-operation with the School of Nursing and the Alberta Association of Registered Nurses, the Department of Extension arranged a Short Course in Staff Development for the Red Deer area and another entitled Supervision in Nursing for senior nursing personnel from across the province. It is expected that the latter course, held at Banff, will become an annual event, serving a distinct training need in the nursing profession.

The beginning of a program of continuing education for lawyers was marked this year with Seminars in Estate Planning held in both major cities. This program is planned in association with the Law Society of Alberta and the University. A two-week course in Work Study was presented in Edmonton and the response to this new type of training was enthusiastic. Work Study is being encouraged on a national scale by the Productivity Branch of the Economic Council of Canada.

The continuing series of Earth Science Conferences which was begun in 1962-63 was continued this year in September and again in May. This series provides an opportunity for senior practicing geologists to become familiar with new findings in geological research. Each Conference has enrolled the sixty students set as a maximum registration.

A lecture series on Operations Research was offered to Edmonton businessmen and because of the good response it will become a regular feature.

All computer programming courses offered at the University are well-attended and students interested in this field can now take both elementary and advanced courses oriented towards either accounting or scientific applications.

Two Group Process Institutes were conducted this year at Banff to provide training in group behavior for social workers, psychiatrists, nurses, teachers, managers and clergy.

Other courses offered in this general area were: Oil and Gas Law Research Seminar, Communications in Supervision, Gross Anatomy, Care of the Premature Infant, Neuroanatomy and Asphalt Pavements.

Community Organization

As the role of voluntary organizations increases in importance in our society and as they come to occupy themselves with vital social issues, they seek guidance in planning their activities. Thousands of people are devoting much time and energy to the objective of their particular voluntary and professional group and their most frequent requests are for assistance in presenting programs and in developing a sound organizational structure. In-service training programs have been set up with a number of these organizations, ranging from occasional consultative sessions to short courses held over a period of several weeks. This work is frequently described as "leadership training" which suggests that the organization members are being prepared to take on more responsibility in their organization and within the community at large.

Much of the work in community organization and community development is done with farm organizations throughout the province. Four main courses are arranged: a Rural Leadership Techniques Course—a two-week residential course at the Banff School of Fine Arts, a Rural Leadership Conference—a two-week residential course at Banff for advanced training in leadership, The Western Canadian Farm Leaders' Conference—a five-day session on "sociological, economic and political implications of agricultural policy", and Farm Young Peoples' Week—a ten-day event presented on the campus in Edmonton to which are invited one hundred and twenty students who are introduced to campus facilities and who receive training in leadership and technical agriculture.

A large number of short workshops and seminars were conducted throughout the province with such groups as the Alberta Federation of Home and Schools, the Alberta Association of Registered Nurses, the Girl Guides Leaders' Conferences, the Junior League, the Edmonton Welfare Council and the Edmonton Native Friendship Centre.

In the January to May period, 1964, five major Public Affairs programs were presented to Albertans by the Department—two public panel presentations were made on the subject of Bilingualism and Biculturalism, one in Edmonton and one in

Calgary; organized in conjunction with the Canadian Association for Adult Education. These two panels presented to Western audiences, for the first time, the new voice of responsible French Canadian spokesmen. The programs held at the Northern and Southern Jubilee Auditoriums in the Social Rooms attracted some five hundred Edmonton and Calgary persons. The public persons presented were Guy Beaugrand-Champagne, Claude Ryan and Jeanne Sauve, all of Montreal.

In an effort to create a better informed press on the subject of bilingualism and biculturalism and federal relations, the Department undertook a special course for members of the press, dealing with the British North America Act and its main clauses. The course registered nineteen newsmen gathered from Edmonton news media and four other individuals for its six weeks duration. The course was not only a pilot run in terms of outreach to the press, but in several other ways it was experimental: in the matter of process the class had a chairman under whom a series of three different lecturers were integrated. Testing was also done in the use of a telephone hook-up for a tele-lecture from the classroom in Edmonton to Montreal. The concern was to present to the Edmonton newsmen an authentic Quebec French viewpoint on some aspects of the B.N.A. Act—the hook-up for a one-hour telephone call between the classroom and the Montreal personality, Claude Ryan, filled the need admirably. It may have opened the way to further use of this technique for educational programming.

The Department of Extension undertook to assist the Royal Commission on Bilingualism and Biculturalism. This required organization of two major community conference hearings—one in Edmonton, April 23 and 24, and the second in Calgary, June 8. The hearings, which were organized on an educational conferencing basis, involved two hundred and thirty-eight citizens in Edmonton and two hundred and thirty-nine in Calgary as fully registered delegates. The evening public platform sessions drew some three hundred in Edmonton and four hundred in Calgary.

Considerable fresh thought is being devoted to the design of a format for the development of public affairs education through public lectures, directed reading programs, discussion programs, selected film series and through evening classes. Within these categories some forty-five programs have been prepared in the course of the year for presentation in succeeding years.

Agricultural Extension

In addition to the substantial program of Rural Leadership Training and Development outlined earlier, a number of intensive short courses on the technical and business aspects of agriculture have been organized and conducted in co-operation with the Alberta agricultural organizations. These include a Conference on the Feed Industry, a Short Course in Beekeeping, Horticultural Judging School and a variety of evening classes in horticulture. The correspondence course developed earlier in farm bookkeeping has been well received by Alberta farmers. Over two hundred farm people are currently working in this program and preparations are being made for an advanced course in farm accounting.

In preparation is a further series of Refresher Courses for Agrologists, Farm Finance Conferences to be conducted at Lethbridge, Calgary, Edmonton and Grande Prairie, an intensive short course in Air Photo and Interpretation, Seminar in Industrial Methods for Agriculture, and a number of evening courses in animal genetics and nutrition scheduled for Lethbridge and Red Deer. The publications budget, administered by the Committee on Agricultural Publications, made possible the preparation and distribution of the following during the year:

Alberta Trees, Shrubs and Flowers—a pictorial collection including descriptions of ornamentals suited particularly to prairie conditions.

St. Mary and Milk Rivers Soil Survey Report

Edmonton Soil Survey Report

The 1963 Feeders' Day Report

The 1963 Agriculture Bulletin

Care and Feeding of Dairy Cattle—a revision of an earlier publication

Legume Innoculation

Poultry Production in Alberta—a revision of an earlier publication

Forest Caterpillar
The Larder Beetle.

To an increasing degree the rural community has been called on to exercise a large measure of local leadership. In the identification and solution of problems, the current program of the Department in Agricultural Extension makes an important contribution to this need. Consideration is being given to an appropriate extension of the Department's program of leadership training.

Fine Arts

For a growing number of Albertans, the Extension Community Art Class program provides an exciting and indeed consuming link to the fine arts. During the year under review, community art classes were conducted at thirty-four points throughout the province with a total of eight hundred and thirty-eight students enrolled. An attempt is being made to decrease the number of points served and to increase the frequency of instruction in central locations. In addition to these regular classes held throughout the province, four short courses were held at Lacombe, Nanton, St. Paul and Yellowknife, featuring local exhibitions of the students' work. An Extension Art Conference was held in the spring focusing on a discussion of the theme "Art Patronage". On this occasion students' work from all over Alberta is exhibited.

Painting, drawing and related subjects are also the most popular offerings in the art classes in Edmonton where the number of students has increased to the extent that both daytime and evening classes must be arranged. In addition to the evening class instruction during the winter months, intensive short courses, such as Drawing and Painting Workshop, Landscape Drawing and Graphics, Landscape Painting and Fundamentals of Drawing, are offered in the spring and the summer using local and visiting instructors.

A Summer School for Strings was held in Edmonton and a Choral Workshop offered in Trochu. Evening classes in music appreciation and in choir training were also presented in Edmonton and Calgary. In co-operation with the Royal Canadian College of Organists and the Lutheran College Society of Edmonton, the Department of Extension arranged a short course in Church Music and Organ Playing in Edmonton. This course was directed towards organists and choir masters in churches and provided coaching in technique as well as opportunities to practice.

The Summer Festival Program presented a series of concerts, recitals, films and lectures. The Edmonton Symphony Orchestra, under the direction of Thomas Rolston, played the works of Haydn, Mozart and Strauss in the ballroom of the Macdonald Hotel. An Organ and Strings concert featured Hugh Bancroft, assisted by a string orchestra under the direction of Richard Eaton, at All Saints Cathedral. The Alberta Opera Society, in a special presentation, performed scenes from favorite operas. A delightful program of chamber music was performed on the fountain patio of the Math-Physics Chemistry Building. A Choral Concert, directed by G. K. Greene, offered Mozart's Coronation Mass and Walford Davies' setting of Eight Nursery Rhymes for Mixed Voices. The film series included such classics as "Ballad of a Soldier", "Wild Strawberries", "Glenn Gould," "Off the Record", "Nanook of the North" and "The Chaplin Festival".

Extension Library

The contribution made by libraries to the community is frequently difficult to assess. The comment below, one of many from readers, clearly indicates appreciation for extension library services:

"I can't begin to tell you how thrilled every member of the family were. It seems you had chosen exactly what each of us wanted most. In fact, I'd say you've opened up a whole new world for us.

This reader's remark is a tribute to the thoughtful work of individual library staff members who prepare book-packages for families, frequently in isolated areas not otherwise served by a library.

In many ways the past year has been extremely difficult for the library due to construction which took place in the library headquarters and as well because of

the dearth of trained librarians. As a result of building changes, library service was disrupted for several months and although it did not close, total circulation of books dropped by eight thousand from the previous year. The drop in circulation, however, is apparent rather than real because the library was forced to send out books on a two-month loan period rather than the usual one-month basis.

Open shelf distribution to families throughout the province accounted for most of the circulation. Travelling libraries—boxes of books on a three-month loan—continued to supplement the collection of small rural libraries which serve as a valuable aid to adult study groups throughout the province.

The library, in addition, serves all students registered in the non-credit evening class program and in many of the short courses and conferences through reading listed prepared and distributed to students.

During the year the library's work continued as usual to provide reference and advisory service to individuals and to small libraries, and reading guidance to students in non-credit classes. Members of the staff contributed to the organization and training of participants in the Great Books and Living Library study discussion programs.

Visual Instruction Division

The chief resource of the Visual Instruction Division is a library of about three thousand 16mm sound films. They are essentially educational in nature and are designed for use with adult groups though in many cases they are suitable for classroom use. To promote the use of this valuable resource in the areas where it would do the most good, the information service of the Division is being expanded. In addition, to insure proper use of the material the Division conducts a series of instructional courses in the utilization of audio-visual material and equipment. Workshops in film programming and in audio-visual communication have been held in Edmonton and Calgary. Other similar courses have been conducted in Banff, Lethbridge and Red Deer.

One hundred and thirty-four films were added to the library. Approximately five hundred films will be withdrawn from circulation due to obsolescence or poor condition. Total film use increased eleven per cent. The use of films intramurally increased twenty per cent.

The record lending service added four hundred record titles. To provide a better balance of selections for subscribers, record purchases made recently included more selections in drama, literature and contemporary music. The total use of records increased fifty-five per cent, with a slight increase in membership. With a broader selection of records and the publication of a new catalogue, it is anticipated that membership will increase substantially in succeeding years.

The staff of the Visual Instruction Division is called upon to perform a variety of functions including consultation, training in the operation of equipment, processing orders for materials and equipment and projection service. Requests for this service have increased twenty-two per cent.

Staff

Sincere thanks must be expressed to all faculty members and to all advisory committee members who have taken part in arranging and presenting classes. Responses to the Department's requests for assistance and advice have been gratifying and have enabled it to undertake a constantly expanding program.

To the staff members of the Department of Extension a special word of thanks is due for their devotion and energy and for their willingness to work a heavy schedule and to meet a variety of demands.

During the year Mr. Allan Des Champs left the Department to take a position with the Calgary School Board as Supervisor of Adult Education. He was replaced by Mr. T. A. Petersen. Mr. Charles Lockwood and Mr. Gerald Wright also joined the staff and are responsible for the programs in business, professional and industrial training and in public affairs, respectively. Mr. G. K. Greene left his position as music specialist to complete graduate studies. Mrs. Lois Sorokin left the staff of the Extension Library. Mr. C. F. Ritchie, Supervisor of the Visual Instruction Division,

resigned to take up a position with the University of Colorado and is succeeded by J. A. Shaw of the University of Indiana. Mr. Glen Eyford was appointed Assistant Director of the Department of Extension.

This report in its other sections records with satisfaction the work of the newly developed division of the Department within the University of Alberta, Calgary. The extension program in the future will undoubtedly continue to reflect the unique resources on this campus as is evident in the program of the last year. The initiation of this division will make it possible to extend the resources of the University of Alberta to the southern reaches of the province. R. S. Chapman, of Calgary, has been appointed Extension Supervisor.

Conclusion

Rapid development, flexibility in program, change in method, use of new media and new tools and, perhaps most importantly, sheer increase in both institutions and student body, characterize all branches of education—University adult education is no exception. That the demand of the Alberta community for continuing education is great is clear from this report. Moreover, through its extension program the University is linking itself with the people of the province in informal education and establishing a significant bond. There is no doubt that the demands on the Canadian university community for continuing education in the future will be great. It is important that provision be made for its expansion.

Table I

A. LIBERAL ARTS EDUCATION

Sponsor	Location	Period	Hours	Attendance
Modern Languages and Literatures				
1. Linguistics: The Study of Language	Edmonton	Oct. 9-Dec. 11	15	19
2. Poetry of the Twentieth Century	"	Oct. 16-Dec. 18	20	7
3. Short Story Writing	"	Oct. 31-Jan. 23	18	41
4. English Conversation and Pronunciation	"	Oct. 1-Feb. 25	30	24
5. Shakespeare	"	Jan. 8-Mar. 11	20	17
6. Intermediate Oral French	"	Oct. 9-Mar. 4	40	19
7. Intermediate Oral French	"	Mar. 21-Jul. 4	32	10
8. Conversational French (1)	"	Oct. 8-Mar. 3	30	26
9. Conversational French (2)	"	Oct. 8-Mar. 3	30	24
10. Oral French (1)	"	Oct. 8-Jun. 5	120	23
11. Oral French (2)	"	Oct. 8-Jun. 5	120	18
12. Advanced Oral French	"	Oct. 7-Jun. 3	90	21
13. Advanced Conversational French	"	Oct. 9-Mar. 4	40	17
14. Intermediate Conversational French	"	Oct. 9-Mar. 11	25	11
15. Italian for Beginners	"	Oct. 9-Mar. 3	30	15
16. Advanced Spanish	"	Oct. 1-Feb. 25	30	13
17. Spanish for Beginners (a)	"	Oct. 7-Mar. 2	30	21
18. Spanish for Beginners (b)	"	Oct. 7-Mar. 2	30	23
19. Spanish for Beginners (c)	"	Oct. 7-Mar. 2	30	15
20. Conversational German (1)	"	Oct. 10-Mar. 5	30	17
21. Conversational German (2)	"	Oct. 10-Mar. 5	30	14
22. Conversational German (3)	"	Oct. 10-Mar. 5	30	20
23. Intermediate German	"	Oct. 8-Mar. 3	30	12
24. Advanced German	"	Oct. 9-Mar. 4	30	9
25. Russian for Beginners	"	Oct. 1-Mar. 24	36	21
26. Ukrainian for Beginners	"	Oct. 2-Mar. 25	36	32
27. Ukrainian Literature	"	Oct. 3-Mar. 26	36	15
28. Norwegian Grammar	"	Jan. 7-Apr. 28	42	15
29. Introduction to German	"	Oct. 9-Mar. 11	30	36
30. Intermediate German	"	Oct. 8-Mar. 10	30	14
31. English Pronunciation and Conversation (a)	Calgary	Oct. 2-Mar. 4	40	20
32. English Pronunciation and Conversation (b)	"	Oct. 3-Mar. 5	40	20
33. Conversational Spanish	"	Oct. 3-Feb. 27	30	36
34. Intermediate Conversational Spanish	"	Sep. 30-Mar. 2	30	8
35. Conversational French (Elementary) (a)	"	Oct. 1-Feb. 25	30	26
36. Conversational French (Elementary) (b)	"	Oct. 3-Feb. 27	30	24
37. Conversational French (Continuation)	"	Oct. 2-Feb. 26	30	31
38. French Language Workshop	"	Oct. 7-Mar. 9	30	19
39. Introduction to General Semantics	"	Sep. 30-Dec. 16	18	21
40. Introduction to General Semantics	"	Jan. 20-Apr. 6	18	18
*1. Great Books Institute	Edmonton and Calgary Great Books Council	May 17-May 19	8	35
	Banff			

Table I—Continued

Sponsor	Location	Period	Hours	Attendance
Religion and Philosophy				
42. Ways of Mankind	Edmonton	Oct. 15-Dec. 17	20	13
43. The Hidden Man (a)	"	Oct. 3-Dec. 5	25	58
44. The Hidden Man (b)	"	Feb. 6-Apr. 9	25	46
45. The Existentialist Movement	"	Oct. 1-Dec. 17	24	28
46. Introduction to the World's Great Religions	"	Oct. 15-Dec. 17	15	34
Psychology				
47. Personality Dynamics	"	Oct. 2-Dec. 18	24	17
48. Child Growth and Development	"	Oct. 13-Dec. 17	20	32
49. Introduction to Applied Psychology	Calgary	Oct. 1-Dec. 3	15	48
50. Applied Psychology	"	Jan. 14-Mar. 17	15	46
History and Political Science				
51. Capitalism, Socialism and Communism	Edmonton	Oct. 10-Dec. 12	15	32
52. The United Nations in Action	"	Oct. 16-Dec. 18	15	8
53. Canada and World Affairs	"	Oct. 16-Feb. 5	20	8
54. B.N.A. Act	"	Mar. 3-Apr. 6	12	24
55. Introduction to Archaeology	Calgary	Oct. 10-Dec. 12	20	20
56. International Affairs—The Critical Years Canadian Institute of International Affairs	"	Jan. 14-Mar. 17	15	44
Social Science				
57. Helping the Speech Handicapped Child	Edmonton	Sep. 30-Dec. 2	15	14
Household Economics				
58. Interior Design (a)	"	Oct. 2-Dec. 4	20	179
59. Interior Design (b)	"	Jan. 8-Mar. 11	20	107
60. Textiles	Calgary	Oct. 13-Dec. 3	16	29
61. Interior Design (a)	"	Sep. 23-Nov. 25	20	54
62. Interior Design (b)	"	Oct. 3-Dec. 5	20	39
63. Interior Design (a)	"	Jan. 20-Mar. 23	20	49
64. Interior Design (b)	"	Jan. 30-Apr. 2	20	17
65. Textiles and the Consumer	"	Jan. 15-Apr. 1	24	14
Science				
66. Astronomy	Edmonton	Oct. 8-Dec. 10	15	9
67. Bird Life in Alberta	"	Oct. 1-Dec. 3	20	10
68. Fossils of Alberta	"	Jan. 13-Mar. 16	15	32
69. Gems and Gem Materials	"	Sep. 30-Dec. 2	10	18
70. Frontiers of Science	"	Feb. 4-Apr. 21	18	198
71. Simple Human Genetics	Calgary	Sep. 30-Dec. 2	15	10
72. Astronomy	"	Oct. 9-Dec. 4	15	9

73. Introduction to Geology	Calgary Public and Separate School Board	Oct. 3-Dec. 5	15
74. Frontiers of Science	"	Feb. 27-May 21	137
75. Field Methods in Paleontology	Alta. Society of Petroleum Geologists	Jan. 15-Feb. 19	13
Law			
76. Men, Women and the Law	"	Oct. 8-Nov. 26	12
High School Enrichment Courses			
77. Psychology	E.P.S.B., E.S.S.B., W.J.P.P.S.B., St. Albert, Edmonton, P.S.B., J.P.P.S.B., Alberta College	Jan. 29-Feb. 26	10
78. Chemistry	"	Jan. 27-Feb. 24	36
79. Business Management	"	Jan. 30-Feb. 27	12
80. Biology	"	Jan. 27-Feb. 24	10
81. English	"	Jan. 27-Feb. 24	33
82. Mathematics	"	Jan. 28-Feb. 25	36
83. History—Political Economy	"	Jan. 29-Feb. 26	10
84. Physics	"	Jan. 29-Feb. 26	33
85. Modern Languages	"	Jan. 29-Feb. 26	10
86. Fossil Faunas of Alberta Ponds and Lakes Workshop	"	Jan. 29-Feb. 26	5
87. Vertebrate Paleontology Workshop	"	Jan. 28-Feb. 25	10
88. Crystallography Workshop	"	Jan. 29-Feb. 26	5
89. Inorganic Chemistry	"	Jan. 27-Feb. 24	10
90. Structure of the Rocky Mountains Workshop	"	Jan. 27-Feb. 24	5
91. Principles of Groundwater	"	Jan. 27-Feb. 24	10
92. Hydrology Workshop	"	Jan. 29-Feb. 26	5
93. Functional Group Analysis of Gas Chromatography—Workshop	"	Jan. 27-Feb. 24	10
94. Capsule Pipelines—Workshop	"	Jan. 27-Feb. 24	5
95. Synthesis of Organic Materials Needed for Research—Workshop	"	Jan. 27-Feb. 24	5
Design of Plant Requirements for the Local Manufacture of a Specific Line of Products—Workshop	"	Jan. 27-Feb. 24	10
B. BUSINESS, PROFESSIONAL AND TECHNICAL EDUCATION			
I Continuing Education in the Professions			
1. Research Seminar in Oil and Gas Law	Canadian Petroleum Law Foundation	Jun. 13-Jun. 15	32
2. Seminar in Estate Planning	Law Society of Alberta	Feb. 24-Feb. 25	15
3. Seminar in Estate Planning	Law Society of Alberta	Feb. 26-Feb. 27	57
4. Care of the Premature Infant	School of Nursing, U. of A. Hospital	Apr. 22-Jun. 1	12
5. Gross Anatomy	Dept. of Anatomy, Faculty of Medicine	Feb. 3-May 11	200
6. Neuroanatomy	Dept. of Anatomy, Faculty of Medicine	Feb. 4-Apr. 6	14
	Edmonton		15
	Edmonton		16

Table I—Continued

	Sponsor	Location	Period	Attendance
7. Supervision in Nursing	School of Nursing, Alta. Assn. of Registered Nurses	Banff	Mar. 15-Mar. 20	42 61
8. Teaching the Retarded Child	Alta. Assn. for Retarded Children	Edmonton	May 20-May 24	30 12
9. Teaching the Retarded Child	Alta. Assn. for Retarded Children	Calgary	Mar. 30-Apr. 3	30 48
10. Group Process Institute	Dept. of Psychiatry, Dept. of Psychology, Alta. Psychology Assn., Psychiatric Assn., Canadian Mental Health Assn., Alcoholism Foundation, Prov. Dept. of Public Health	Edmonton	Sep. 15-Sep. 25	80 45
11. National Conference on Earth Science	Alta. Assn. of Pet. Geologists	Banff	May 6-May 10	20 61
12. National Conference on Earth Science	Alta. Assn. of Pet. Geologists	Banff	Sep. 23-Sep. 27	20 61
13. Asphalt Pavements	Dept. of Civil Engineering	Edmonton	Feb. 10-Feb. 11	13 197
14. Aspects of Modern Biology	Calgary Council of Biology Teachers	Calgary	Feb. 18-Mar. 17	10 26
II Certificate Programs				
a) Management Development Program				
15. Canadian Economic Development		Edmonton	Oct. 17-Apr. 16	50 33
16. Management Accounting and Financial Controls—Sec. A		"	Oct. 15-Apr. 14	50 37
17. Management Accounting and Financial Controls—Sec. B		"	Oct. 15-Apr. 14	50 37
18. Business Organization and Administration—Sec. 1		"	Oct. 16-Apr. 15	50 39
19. Business Organization and Administration—Sec. 2		"	Oct. 16-Apr. 15	50 36
20. Business Finance		"	Oct. 15-Apr. 14	50 29
21. Personnel Administration		"	Oct. 16-Apr. 15	50 41
22. Commercial Law		"	Oct. 16-Apr. 15	50 32
23. Marketing		"	Oct. 16-Apr. 15	50 33
24. Canadian Economic Development		"	Oct. 21-Apr. 20	50 30
25. Management Accounting and Financial Controls		Calgary	Oct. 16-Apr. 15	50 41
26. Business Finance		"	Oct. 15-Apr. 14	50 14
27. Personnel Administration		"	Oct. 16-Apr. 15	50 17
28. Commercial Law		"	Oct. 17-Apr. 15	50 30
29. Marketing		"	Oct. 17-Apr. 16	50 29
30. Business Organization and Administration		"	Oct. 17-Apr. 15	50 39
b) Registered Industrial Accountants				
31. Accounting I — Sec. 1	Society of Industrial & Cost Accountants of Alberta	Edmonton	Oct., Apr.	40 36
32. " — Sec. 2	"	"	"	40 36
33. " — Sec. 3	"	"	"	42 40
34. " — Sec. 4	"	"	"	40 42
35. " — Sec. 1	"	Calgary	"	48 45
36. " — Sec. 2	"	"	"	36 51
37. " — Sec. 3	"	"	"	44 43
38. " — Sec. 4	"	"	"	40 45

39. Industrial Legislation — Sec. 1	"	"	"	Edmonton	40	41
40. " — Sec. 2	"	"	"	"	42	41
41. " — Sec. 3	"	"	"	"	40	33
42. " — Sec. 4	"	"	"	"	44	31
43. " — Sec. 1	"	"	"	Calgary	40	51
44. " — Sec. 2	"	"	"	"	40	46
45. " — Sec. 3	"	"	"	"	40	47
46. " — Sec. 4	"	"	"	"	38	43
47. Accounting II— Sec.1	"	"	"	Edmonton	42	43
48. " — Sec. 2	"	"	"	"	42	43
49. " — Sec. 1	"	"	"	Calgary	42	36
50. " — Sec. 2	"	"	"	"	42	36
51. " — Sec. 3	"	"	"	"	40	34
52. Fundamentals of Cost Accounting — Sec. 1	"	"	"	Edmonton	40	44
53. " — Sec. 2	"	"	"	"	40	42
54. " — Sec. 1	"	"	"	Calgary	40	38
55. " — Sec. 2	"	"	"	"	40	39
56. " — Sec. 3	"	"	"	"	40	32
57. Advanced Cost Accounting — Sec. 1	"	"	"	Edmonton	44	31
58. " — Sec. 2	"	"	"	"	44	31
59. " — Sec. 3	"	"	"	"	40	43
60. Managerial Statistics	"	"	"	Calgary	42	41
61. " — Sec. 1	"	"	"	Edmonton	20	52
62. Industrial Organization & Management	"	"	"	Calgary	40	19
63. " — Sec. 2	"	"	"	Edmonton	48	22
64. Report Writing	"	"	"	Calgary	20	21
65. " — Sec. 1	"	"	"	Edmonton	20	43
66. Accounting III	"	"	"	Calgary	24	34
67. " — Sec. 2	"	"	"	Edmonton	22	50
68. Accounting IV	"	"	"	Calgary	30	23
69. " — Sec. 3	"	"	"	Edmonton	24	37
70. Economics	"	"	"	Calgary	20	32
71. Economics—Continuation	"	"	"	Calgary	10	11
c) Real Estate						
72. Real Estate — 1st year	Alberta Real Estate Association			Edmonton	30	38
73. Real Estate — 2nd year	"	"	"	"	30	16
74. Real Estate — 3rd year	"	"	"	Calgary	30	11
75. Real Estate — 1st year	"	"	"	"	30	36
76. Real Estate — 2nd year	"	"	"	"	30	10
77. Real Estate — 3rd year	"	"	"	"	30	15
d) Personnel Administration						
78. Personnel Administration — 2nd year	Personal Association, Edmonton			Edmonton	36	54
79. Personnel Administration — 2nd year	Personnel Association, Calgary			Calgary	36	27
e) Public Administration						
80. Local Government Business Affairs	Dept. of Municipal Affairs, Alta. Assn. of Municipal Districts, Alta. Assn. of Mun. Dist. Sec.-Treas., Union of Alta. Mun., Dept. of Education, Alta. School Trustees Assn., Alta. School Sec. Assn.			Fairview	25	7

Table I—Continued

	Sponsor	Location	Period	Attendance
81.	"	Edmonton	Oct. 1-Dec. 30	25
82.	"	Vermillion	Oct. 1-Dec. 30	25
83.	"	Stettler	Oct. 1-Dec. 30	25
84.	"	Calgary	Oct. 1-Dec. 30	25
85.	"	Lethbridge	Oct. 1-Dec. 30	25
86.	Local Government Accounting Course	Edmonton	Oct. 1-Dec. 30	32
87.	"	Calgary	Oct. 1-Dec. 30	25
88.	"	Lethbridge	Oct. 1-Dec. 30	25
89.	Assessment Appraisal Course	Edmonton	Oct. 1-Dec. 30	25
90.	"	Gr. Prairie	Oct. 1-Dec. 30	25
91.	"	Edmonton	Oct. 1-Dec. 30	25
92.	"	Red Deer	Oct. 1-Dec. 30	25
93.	"	Castor	Oct. 1-Dec. 30	25
94.	"	Calgary	Oct. 1-Dec. 30	25
		Lethbridge	Oct. 1-Dec. 30	25
III Management Training				
95.	Communication in Supervision	Edmonton	Apr. 22-Apr. 24	17
96.	Communication in Supervision	Calgary	Apr. 25-Apr. 27	17
97.	Communication in Supervision	"	Jan. 30-Feb. 1	17
98.	Introduction to Supervision (a)	"	Oct. 8-Dec. 10	20
99.	Introduction to Supervision (b)	"	Oct. 10-Dec. 12	20
100.	Introduction to Supervision (a)	"	Oct. 16-Mar. 5	16
101.	Introduction to Supervision (b)	"	Jan. 20-Mar. 23	20
102.	Problems in Supervision (a)	Calgary	Jan. 16-Mar. 5	16
103.	Human Relations Program	Edmonton	Apr. 8-Apr. 15	35
104.	Human Relations Program	"	Apr. 1-Apr. 5	35
105.	Human Relations Program	"	Mar. 25-Mar. 29	35
106.	Human Relations Program	"	Mar. 18-Mar. 22	35
107.	Human Relations Program	Calgary	Apr. 1-Apr. 5	35
108.	Human Relations Program	"	Apr. 8-Apr. 11	35
109.	Human Relations Program	"	Apr. 15-Apr. 19	35
110.	Human Relations Program	"	Apr. 22-Apr. 26	35
111.	Human Factors in Management	Edmonton	Oct. 2-Dec. 11	22
112.	Human Factors in Management	"	Oct. 2-Dec. 11	22
113.	Human Factors in Management	"	Jan. 15-Mar. 25	22
114.	Sales Management	"	Oct. 2-Dec. 18	24
115.	Sales Management	"	Jan. 15-Apr. 1	24
116.	Successful Communication for Administrators	"	Oct. 9-Dec. 11	20
117.	Law in Action	"	Oct. 1-Dec. 17	18
118.	Income Tax Procedures in Business	"	Jan. 21-Mar. 10	12
119.	Public Speaking for Businessmen	"	Jan. 23-Mar. 25	20
	Sec. A	"	Jan. 20-Mar. 26	20
120.	Public Speaking for Businessmen	"	Jan. 20-Mar. 9	16
	Sec. B	"	Jan. 14-Mar. 17	20
121.	Small Business Case Study Seminar	"	Oct. 21-Apr. 13	48
122.	Financial Management in Small Business	Calgary	Oct. 22-Apr. 14	32
123.	Operations Research	Edmonton	Jan. 13-Apr. 6	15
124.	Operations Research	"	"	32

125. Essentials of Good English—Sec. 1	"	Jan. 13-Apr. 6	15	32
126. Essentials of Good English—Sec. 2	"	Jan. 14-Apr. 7	15	21
127. Essentials of Good English (a)	Calgary	Oct. 2-Dec. 18	18	22
128. Essentials of Good English (b)	"	Oct. 2-Dec. 19	18	23
129. English Usage for Chartered Acc'tants	Edmonton	Sep.-Nov.	....	38
130. English Usage for Chartered Acc'tants	Calgary	Sep.-Nov.	....	16
131. English Usage for Chartered Acc'tants.	Correspondence	Sep.-Nov.	....	16
132. Effective Reading	Calgary	Jan. 23-Mar. 26	10	32
IV Mathematics, Physics, Computer Courses				
133. Mathematics of Finance	Calgary	Jan. 20-Mar. 9	12	11
134. Introduction to Statistics	"	Oct. 3-Feb. 27	30	17
135. Theory of Matrices	"	Oct. 3-Jan. 30	30	17
136. Algebra	Edmonton	Oct. 3-Mar. 26	48	13
137. Numerical Methods	Calgary	Jan. 14-Mar. 31	24	15
138. Switching Circuits and Logical Design	Edmonton	Jan. 9-Mar. 12	15	18
139. (a) Switching Circuits and Logical Design	"	Jan. 13-Mar. 16	15	15
140. (b) Mechanics of Fluids	"	Sep. 30-Mar. 23	48	31
141. Chemical Bonding	Lethbridge	Jan. 31-Feb. 28	10	37
142. Chemical Bonding	M. Hat	Feb. 1-Feb. 29	10	15
143. Modern Approach to Chemical Bonding	Calgary	Nov. 5-Dec. 3	8	72
144. Semi-Conductors and Transistors	Edmonton	Oct. 1-Dec. 17	24	31
145. Fundamentals of Computer	"	Sep. 25-Dec. 18	26	18
146. Fundamentals of Computer	"	Sep. 24-Dec. 17	26	17
147. Fundamentals of Computer	"	Sep. 24-Dec. 17	26	21
148. Fundamentals of Computer	"	Sep. 25-Dec. 18	26	14
149. Fundamentals of Computer	"	Jan. 6-Mar. 31	26	19
150. Fundamentals of Computer	"	Jan. 8-Apr. 1	26	16
151. Introduction to Electronic Computer	Calgary	Oct. 7-Nov. 25	12	56
152. Introduction to Electronic Computer	"	Jan. 20-Mar. 16	12	37
153. Senior Course in Computer	"	Oct. 7-Mar. 2	30	17
154. Management Considers the Digital Computer	Edmonton	Sep. 25-Dec. 18	26	18
155. Commercial Computer Applications	"	Jan. 8-Mar. 25	18	11
156. Scientific and Engineering Computer Applications.	"	Jan. 9-Mar. 12	15	18
157. Designing Data Processing Computer Systems	Calgary	Oct. 9-Dec. 11	20	19
158. Designing Data Processing Computer Systems.	"	Jan. 14-Mar. 17	20	18

Table 1—Continued

	Sponsor	Location	Period	Attendance
V General Interest Courses				
159. An Introduction to City Planning		Calgary	Oct. 9-Dec. 11	15
160. The Pre-School Child		Edmonton	Oct. 30-Apr. 1	30
161. Prospecting			Oct. 21-Dec. 5	23
162. Group Discussion			Oct. 30-Nov. 6, 13	9
163. Managing Investments	Investment Dealers' Assn. of Can.	Calgary	Jan. 23-Mar. 19	18
164. Audio-Visual Communication Seminar		Edmonton	Feb. 27, 28, 29	20
165. Audio-Visual Communication Seminar		Calgary	Mar. 12, 13, 14	20
C. AGRICULTURE				
1. Farm Young Peoples' Week	AWP, FWUA, FUA, Jr. UGG, UFA, Co-op, Faculty of H.E.C., Faculty of Agriculture, Pioneer Grain Ltd.	Edmonton	Jun. 11-Jun. 20	75
2. First Alberta Horticultural Judging School	A.H.A., Alta. Dept. of Agriculture, University of Alberta	Olds	Aug. 8-Aug. 9	15
3. Fundamentals of Farm Bookkeeping		Correspondence	6 months	15
4. Western Canadian Farm Leaders Conference		Banff	Mar. 23-Mar. 26	20
5. Leadership Techniques Short Course		Banff	Jan. 20-Feb. 1	70
6. Beekeeping Short Course	AWP, RUA, UFA, Co-op, UGG, AWI, FWUA, ACWA, Jr. FUA	Edmonton	Feb. 10-Feb. 14	25
7. Gardening Course	A.B.A., U. of Alta., Alta. Department of Agriculture	Edmonton	Feb. 25-Apr. 28	20
8. Rural Leadership	AWP, FUA, UFA, Co-op, UGG, FWA, Dept. of Ag., AFA, Dept. of Cit. & Immig.	Banff	Feb. 23-Mar. 7	70
9. Annual Feed Industry Conference		Red Deer	Nov. 21-Nov. 22	15
10. Farm Finance Conference	Taber, Calgary, Red Deer, Edmonton	Gr. Prairie		120
D. COMMUNITY CONFERENCES				
1. Alberta Film Conference		Red Deer	Apr. 4-Apr. 5	9½
2. Peace River Training Lab. in Community Development		P. River	Jan. 11-Jan. 12	15
3. Quebec Conference		Edmonton	Feb. 11	6
4. Quebec Conference		Calgary	Feb. 13	8
E. CONTINUING EDUCATION IN THE FINE ARTS				
I Drama				
1. Voice Production and Speech Arts		Edmonton	Jan. 7-Mar. 10	32
2. Voice Production and Speech Arts II		"	Jan. 9-Mar. 12	17½
3. Voice Production (1)		"	Oct. 10-Dec. 12	17½
4. Voice Production (2)		Calgary	Oct. 12-Dec. 14	17½
5. Contemporary Drama			Sep. 30-Dec. 2	20
II Music				
6. Summer School for Strings (1)		Edmonton	Jul. 22-Aug. 3	50
7. Summer School for Strings (2 & 3)		"	Jul. 22-Aug. 3	30

8. What to Listen for in Music (a)
9. What to Listen for in Music (b)
10. Meet Modern Music (a)
11. Meet Modern Music (b)
12. Training a Choir
13. Choral Workshop

Oct. 1-Dec. 3 15 36
 Jan. 14-Mar. 17 12 58
 Oct. 23-Dec. 11 12 17
 Feb. 14-Apr. 10 10 14
 Oct. 2-Dec. 4 15 12
 Jan. 13-Mar. 16 15 53

Calgary
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III Fine Arts Classes—Edmonton

14. Portrait Painting I
15. Portrait Painting II
16. Fundamentals of Drawing
17. Fundamentals of Drawing
18. Drawing I
19. Drawing II
20. Life and Portrait Painting
21. Life Painting
22. Fundamentals of Painting
23. Painting Workshop
24. Painting I
25. Painting I
26. Painting I
27. Painting II
28. Landscape Painting
29. Landscape Painting
30. Landscape Painting
31. Fundamentals of Landscape Painting
32. Fundamentals of Landscape Painting
33. Fundamentals of Landscape Painting
34. Design I
35. Design II
36. Design II
37. Commercial Art
38. Life Drawing and Painting
39. Life Drawing and Painting
40. Drawing and Painting Workshop
41. Drawing and Painting Workshop
42. Drawing and Painting Workshop
43. Drawing and Painting Workshop
44. Graphic Workshop
45. Architectural Appreciation

Edmonton

Apr. 1-Jun. 10 20 13
 Sep. 30-Mar. 9 40 23
 Apr. 2-Jun. 11 25 26
 Oct. 1-Mar. 3 50 14
 Oct. 1-Mar. 3 50 26
 Oct. 1-Mar. 3 40 19
 Apr. 3-Jun. 12 20 11
 Oct. 2-Mar. 4 40 10
 Apr. 3-Jun. 12 20 10
 Jul. 15-Jul. 26 20 8
 Oct. 2-Mar. 11 50 33
 Oct. 3-Mar. 5 50 18
 Oct. 3-Mar. 12 50 23
 Oct. 3-Mar. 5 60 16
 Oct. 3-Jun. 12 30 15
 Apr. 3-Jun. 12 33 17
 Sep. 18-Nov. 27 33 19
 Sep. 21-Nov. 30 33 19
 Apr. 6-Jun. 8 30 25
 Jul. 3-Jul. 12 24 17
 Jul. 15-Jul. 26 30 11
 Sep. 30-Mar. 9 50 4
 Sep. 30-Mar. 9 50 10
 Sep. 30-Mar. 9 40 13
 Sep. 30-Mar. 9 40 27
 Oct. 4-Mar. 6 40 13
 Mar. 22-May 31 22 21
 Jan. 18-Mar. 21 20 15
 Apr. 4-Jun. 13 30 15
 Jan. 15-Mar. 18 20 16
 Jan. 18-Mar. 21 20 15
 Apr. 2-Jun. 11 20 15
 Oct. 1-Mar. 3 40 10

Edmonton

Calgary

IV Community Art Classes and Conferences

46. Workshop for Senior Students
47. Extension Art Conference
48. Northern CAC Conference
49. Southern CAC Conference

Edmonton

"
 " Nanton

Apr. 15-Apr. 19 22½ 23
 Mar. 21 300
 Mar. 30 150
 Jun. 15 55

Table I—Continued

	Sponsor	Location	Period	Attendance
50.	Athabasca	Athabasca	Oct. 10-Mar. 12	18
51.	Banff Short Course	Banff	Oct. 2-Apr. 8	22
52.	Barrhead	"	Jun. 1-Jun. 2	21
53.	Barrow	Barrhead	Oct. 28-Apr. 27	9
54.	Carstairs	Camrose	Oct. 19-Apr. 25	14
55.	Castor	Carstairs	Oct. 24-Apr. 6	21
56.	Cluny	Castor	Oct. 23-Apr. 22	28
57.	Cochrane	Cluny	Oct. 12-Apr. 11	14
58.	Drayton Valley	Cochrane	Sep. 30-Apr. 13	15
59.	Drumheller Short Course	Drayton Valley	Oct. 17-Apr. 16	28
60.	Drumheller	Drumheller	Oct. 22-Apr. 14	14
61.	Edson	Drumheller	May 13, 14, 15	17
62.	High Prairie	Edson	Oct. 25-Apr. 24	10
63.	High River	High Prairie	Oct. 11-Mar. 13	12
64.	Innisfail	High River	Oct. 21-Apr. 8	12
65.	Lacombe	Innisfail	Oct. 16-Apr. 15	19
66.	Leduc	Lacombe	Jun. 25-Jun. 28	40
67.	Medicine Hat	Leduc	Oct. 16-Apr. 15	21
68.	Medicine Hat	Medicine Hat	Oct. 15	2
69.	Medicine Hat	Medicine Hat	Oct. 11-Apr. 10	17½
70.	Nanton	Medicine Hat	May 31	3
71.	Nanton	Nanton	Oct. 3-Apr. 9	21
72.	Nanton (Sculpture)	Nanton	Jun. 11-Jun. 14	10
73.	Olds	Olds	Oct. 17-Apr. 16	40
74.	Pincher Creek	Olds	Oct. 17-Apr. 16	14
75.	Ponoka	Pincher Creek	Oct. 18-May 2	16
76.	Ralston	Ponoka	Oct. 4-Apr. 17	21
77.	Red Deer	Ralston	May 27, 28, 29, 30	12
78.	Red Deer	Red Deer	Oct. 18-Apr. 24	21
79.	Red Deer	Red Deer	Oct. 18-Apr. 24	18
80.	Redwater	Redwater	Nov. 15-Apr. 24	20
81.	Ryley	Redwater	Oct. 17-Apr. 16	14
82.	St. Paul Short Course	Ryley	Oct. 10-Apr. 9	13
83.	Sylvan Lake	St. Paul	Apr. 16-Apr. 18	15
84.	Taber	Sylvan Lake	Oct. 17-Apr. 16	20
85.	Vermilion	Taber	Oct. 10-Apr. 9	14
86.	Viking	Vermilion	Oct. 9-Mar. 11	18
87.	Wainwright	Viking	Oct. 25-Apr. 30	13
88.	Wapiti	Vulcan	Oct. 3-Apr. 9	21
89.	Westlock	Wainwright	Oct. 24-Apr. 29	18
90.	Westlock	Wapiti	Oct. 23-Apr. 29	14
91.	Yellowknife	Westlock	Oct. 11-Mar. 13	15
92.	Yellowknife	Westlock	Oct. 19-Apr. 25	17½
93.	Yellowknife	Westlock	Apr. 23-Apr. 25	8
94.	Yellowknife	Yellowknife	Jun. 6-Jun. 9	12
		"	Nov. 22-Nov. 24	10
		"	Nov. 25-Nov. 28	12

RECAPITULATION OF TABLE I
Student Registration

<i>Liberal Arts Education</i>	Enrolment	
Modern Language and Literature	827	
Religion and Philosophy	179	
Psychology	143	
History and Political Science	136	
Social Science	14	
Household Economics	488	
Science	446	
Law	37	
High School Enrichment Courses	348	2,618
<hr/>		
<i>Business, Professional and Technical Education</i>		
Continuing Education in the Professions	691	
Certificate Programs		
Management Development	521	
Registered Industrial Accountants	1,548	
Real Estate	126	
Personnel Administration	81	
Public Administration	202	
Management Training	1,060	
Mathematics, Physics, Computer Courses	574	
General Interest Courses	160	4,963
<hr/>		
<i>Agriculture</i>		732
<i>Community Conferences</i>		209
<i>Continuing Education in the Fine Arts</i>		
Drama	97	
Music	286	
Fine Arts Classes—Edmonton	512	
Community Art Classes and Conferences	1,308	2,203
<hr/>		
TOTAL		10,725

Table II—Statistical Information, Extension Library

CIRCULATION OF BOOKS	1962-63	1963-64	Difference
<i>Open Shelf</i>			
Adult books (including periodicals and sets of pamphlets)	92,726	86,580*	—6,146
Children's books	49,174	47,468*	—1,706
	141,900	134,048	—7,852
<i>Travelling Libraries</i>			
No of Travelling Libraries:			
	1962-63	1963-64	
Adult	56	53	
Mixed	25	24	
Children's	5	7	
	86	84	
Circulation	5,555	3,156	—2,399
<i>Banff School</i>	494	470	— 24
<i>Total Circulation</i>	147,949	137,674	—10,275
<i>Memberships</i>			
April 1, 1963 to March 31, 1964	2,038		
<i>Collection</i>			
No. of books at April 1, 1963	54,063		
Accessions during the year	2,856		
Withdrawals during the year	662	2,194	
No. of books at March 31, 1964	56,257		

*From September 23, 1963, to February 15, 1964, during building alterations, books were loaned for two months.

Table III—Statistical Information, Division of Visual Instruction

Number of Motion Picture Films in Library:	
8 mm.	150
16 mm.	3,554
Total Motion Picture Films in Library	3,704
Total Motion Picture Films added to Library 1963-64	134
Number of Filmstrips in Library	3,225
Number of Slide Sets in Library	188
Number of Records in Library	860
Number of Tapes in Library	19
Number of Pieces of Audio-Visual Equipment Available for Loan or Rental	80

AUDIO-VISUAL MATERIALS CIRCULATION

Number of Record Lending	Intra- Mural	1963-64 Extra- Mural	Total	1962-63 Total
Number of 8 mm. Motion Picture Subjects Circulated	14	238	252	317
Number of 16 mm. Motion Picture Subjects Circulated	1,253	11,639	12,892	11,639
Total No. Reels of 16 mm. Motion Picture Films Circulated	2,897	21,146	24,042	20,629
Number of Filmstrips Circulated	301	5,320	5,621	5,638
Number of Slide Sets Circulated	0	18	18	31
Number of Records Circulated		4,389	4,389	2,815
Service Memberships		147	147	142
Number of Tapes Circulated		3	3	0
Number of Times Audio-visual Equipment Supplied	690	651	1,341	1,244
Total Number of Days Equipment Used	2,133	1,184	3,317	2,705
Number of Times Projection Service Supplied	179	43	222	264
Number of Times Screening Room Facilities Used	219	120	339	306
Number of Orders Processed— Total Library			12,328	10,057

Report of Senator Donald Cameron, Director of the Banff School of Fine Arts

The thirty-first annual report of the Banff School of Fine Arts and Centre for Continuing Education records by far the largest aggregate enrolment of people in the history of the School. The number of separate groups using the School increased from 244 the previous year to 278 in the year ending March 31st last. The aggregate attendance represented by these groups was 19,078 compared with 13,215 the year before, or an almost phenomenal increase of nearly 45%; the largest increase in the history of the institution.

The groups who are using the facilities of the School represent a fairly complete cross-section of the community. They include educational groups of all kinds, church groups, recreational groups and business groups in increasing numbers. They are mainly adults and they come from every province in Canada, with a substantial number coming from the United States and abroad. Altogether, the last academic year, in addition to being the year of our largest enrolment to date, was also satisfactory in respect to the increasing numbers of Short Courses and Conferences of a substantial educational content. Outstanding among these, of course, was the regular Summer Session in the Fine Arts which had an enrolment of 1,137 of which 203 were registered in the Provincial Government Orchestral and Band Workshop held in cooperation with the Banff School for the second time. The 934 students registered in the regular Banff School of Fine Arts Summer Session courses represent an increase of nearly 16% over the previous year—the largest annual increase in the history of the summer Fine Arts program.

Of equal importance in a different field was the Banff School of Advanced Management sponsored by the Universities of Alberta, British Columbia, Saskatchewan and Manitoba, and the School's own Short Courses in management training, including Personnel Management, Marketing Management, Executive Development, Life Insurance Marketing, and Small Business Administration. The latter was an extremely successful venture, so much so, that two courses were held in 1963-64. One of these was conducted exclusively for John Deere Implement Company dealers throughout Western Canada.

Among our newer ventures was the sponsoring, for the second time, with the Cultural Activities Branch of the Provincial Government, of their Sixth Orchestral and Band Workshop. However, with the Provincial Band Workshop students at a considerably lower level than the regular students, it may be that this institution should be held separately and in some other place. It is nevertheless encouraging to see the large number of students being encouraged to take up instrumental work under this program.

The Figure Skating School, a new venture in the 1962 Summer Session, seems to be well established and looks as if it will become a regular part of the School program.

Another encouraging development during the year was the growth of the Community Classes in Fine Arts held during the winter months on a weekly basis. The people who came to participate in these classes came from Lake Louise, Banff, Canmore, Exshaw and Seebe. Altogether 119 people were registered in classes as follows:

Ballet	27
Ceramics	22
Drama	14
French	5
Weaving	11
Painting	40

There was a slight drop from 137 to 119 in these classes as compared with the previous year, but the number of people attending the classes offered was higher than in previous years, and this program is having a very fine effect in the mountain region of the Alberta foothills. For the first time we were able to get a substantial number of qualified instructors from the Banff area and this augurs well for the future.

The Painting Class was one of the regular programs in the Department of Extension's Community Art Class Series, but was held in the studios of the School. In addition to this two or three Painting Workshops were held at the School under the leadership of Miss Janet Middleton.

An interesting fact was that these classes were entirely self-supporting. There were a total of 60 separate courses offered during the 1963 Summer Session and when the Six Winter Classes were added, the total was 66, with a gross registration of 1,256 for the year. Instruction for these classes was provided by a staff of 115 teachers, several of whom were brought from Britain, France, the United States, and several Canadian Provinces.

Following the practice of previous years, the major productions of the Opera, Ballet and Drama Divisions, were taken on tour after being given two or three performances each in Banff. The Opera, TOSCA, was taken to Edmonton, Red Deer, Calgary, Lethbridge and Medicine Hat. The Drama Division's production of OTHELLO was taken to Edmonton and Calgary, and the Festival Ballet Production was put on in Calgary and Kelowna, B.C. Audiences totalling 20,000 saw these near-professional productions and they provided admirable training experience for those participating.

The gross cost of the festival tours, including transportation, hotels, meals, costumes, share of teaching, and technical staff, was \$44,290.00, of which \$17,000.00 was recovered from admissions, plus a \$3,000.00 contribution made to the cost of the orchestra and accompanists by the Canada Council.

As in previous years the Provincial Government, the Alberta Hotel Association, private individuals, social organizations, community clubs, service clubs and business

organizations donated approximately \$20,000.00 to provide scholarships and bursaries for talented and needy students. This generosity enabled the School to provide some 187 scholarships which varied in value from \$50 to as much as \$600. In addition to these cash contributions, the School itself donated room, board, and tuition fees to a value of \$15,000, making a total contribution in the way of scholarships and bursaries of \$35,000, the largest in the history of the School. The provision of funds for scholarships and bursaries is one of the best investments that can be made, and the high quality of the Banff School program is a direct reflection of the fact that outstanding and serious students are attracted to the School and these students, by their hard work and dedication to their chosen field, set an example which is enthusiastically followed by others.

A feature of Scholarship Night on July 19th, 1963, was the presentation of the University's National Award in Painting and Related Arts to Dr. Charles F. Comfort, Director of the National Gallery of Canada.

In the field of Management Training and Executive Development, some 36 weeks a year are given over to business courses and conferences of one kind or another. The most important of these was the 15th Session of the Banff School of Advanced Management, a six-week executive program sponsored as a cooperative endeavour by the Universities of Alberta, British Columbia, Manitoba and Saskatchewan. Ninety students participated in this year's course and they were an extremely serious and hard-working group. This year for the first time we had a group of four students from Southeast Asia. They added a great deal to the interest of the School, and the experiment was so successful that the Board of the Banff School of Advanced Management has agreed that in future years its policy will be to reserve approximately 10% of its places for "off-shore" students from Southeast Asia, Japan, Australia and New Zealand, Africa, South America and the Caribbean area. Since the inception of this course in 1952, a total of 971 executives have successfully completed the six-week course. These men, or 968 men and three women, are holding increasingly important positions in almost every kind of business in Canada, and the School is making a distinct contribution in business leadership at both the National and Community levels.

A total of 86 different business and professional groups with an aggregate attendance of 5,320 attended short courses and conferences during the year. This in itself is an encouraging evidence of the growing demand for a more professional and better trained individual in every aspect of business life.

Coming to the operational side of the Banff School, the year just closed was a record one. Thanks to the generosity of the Provincial Government, the Canada Council and a number of private donors, the School completed at the end of 1962 the South Wing of the Administration Building at a cost of \$400,000. This wing contains 46 twin bedrooms, with bath or shower, 13 studios, 2 offices, and a lounge. It marks the completion of the main Administration Building which now provides 85 twin bedrooms with bath, 35 classrooms and studios, a 600-seat auditorium, a 650-seat dining room, a snack bar, and lounges, a really fine adult education centre. When the accommodation of the four residential chalets on the St. Julien Campus are added to those of the Administration Building, the School has, on the main campus, 194 twin bedrooms, a number of dormitory rooms, 47 classrooms, 11 lounges, 8 offices, an auditorium, and a dining room, making it one of the most complete residential adult schools in Canada. Altogether it has sleeping accommodation in the Summer Session for 850 people.

A sidelight on the increasing use being made of the School's facilities is seen in the comparative figures showing the number of students accommodated on an over-night basis in the School's own facilities, in each of the last four years:

Year	Number of Student Guests	Total No. Room-Days
1960-61	8,545	48,601
1961-62	8,239	48,818
1962-63	11,628	61,238
1963-64	14,070	75,702

From the operational standpoint, room, board and tuition fees brought in approximately \$700,000 during the year, up almost \$200,000 from the year before.

From the above figures it will be seen that there was an increase of almost 25% in the number of room days compared with the previous year. The trend to a greater occupancy rate will continue to show a substantial increase in 1964-65 because more and more groups are holding repeat courses at the School, and each group seems to grow in numbers. With the completion of Chalet IV in 1964 it means that we have more facilities than ever before available.

It would not be appropriate to conclude this report without a special word of praise for the key staff of the School. Mr. Ken Madsen, Mr. Don Becker, Robert Arkle, Dave Bebb, Walter Henderson, Miss Signe Gunderson, Miss Alice Morley, Miss Mietza Larness and their respective staffs have given a splendid account of themselves. They have worked as a team with enthusiasm and dedication to their duties and have set a very high standard of public service.

In completing 31 years of service in the field of residential adult education, the Banff School of Fine Arts and Centre for Continuing Education has come a long way from its small beginning in August 1933, when 128 people spent four weeks taking "a course in the Arts related to the Theatre". The School has pioneered, improvised and grown with the country until today it is looked upon as one of the leading centres of adult education in America. But as the institution has grown, so has the need to provide opportunities for Canadians at every level of life to continue their education. This is particularly true in the case of management training, an area which is rapidly growing in importance in the field of adult education. It will be the aim and the responsibility of the Banff School as an important element of the University of Alberta to play an even larger role in the cultural and educational life of the community in the years to come.

Report of Dr. A. R. P. Paterson, Director of the University of Alberta Cancer Research Unit

McEachern Laboratory

The renovation of the McEachern Laboratory, prior to its occupancy by the Cancer Research Unit, was completed by the end of March 1963. The new Laboratory was formally opened on May 25, 1963.

The basic equipment and instruments for the new Laboratory were purchased through a grant from the Alberta Division of the Canadian Cancer Society in the amount of \$95,135.00. As mentioned in the last annual report, an important component of the initial equipment grant was the gift of \$13,000.00 by the Edmonton Civic Employees' Association, which was earmarked for the purchase of a liquid scintillation spectrometer (for the assay of radioactivity in biological materials). Other contributions during the past year which have helped build up the basic equipment in the McEachern Laboratory are acknowledged as follows:

Alberta Civil Service Employees Welfare Fund — \$500.00
(for reference texts)

United Commercial Travellers Women's Auxiliary — \$535.00
(for pH meter)

Active 20-30 Club of Edmonton — \$400.00
(for electrophoresis power supply)

Herbert Barlow Memorial Fund Trust — \$100.00
(for reference texts)

Cancer Research Unit

The research program of the Cancer Research Unit is well under way now that the requirements for senior staff have been met. The research program is strongly oriented towards the chemistry, enzymology and metabolism of nucleotides in cancer cells. In this area of metabolism are found the enzymatic targets for a number of drugs of present importance in cancer treatment. The metabolism of these drugs and their effects on the chemical machinery of the cancer cell are topics of particular interest in the Cancer Research Unit.

Staff

Dr. Alexander Hampton joined the Unit in May of last year and Dr. J. Frank Henderson became a member of the staff in August. Both men have received joint

appointments to Faculty as members of the Department of Biochemistry, both with the rank of Associate Professor. During the past year, they have set up their laboratories and now have their research programs well under way.

It is a policy of the Unit to attempt an emphasis on assistance from past doctoral research fellows, in contrast to the usual assistance from technically trained persons, as a means of accomplishing research objectives. In this connection, it has been our experience during the past year that post doctoral fellows are in great demand and that it is difficult to compete in this area with agencies, institutions and industries in the United States. However, two post doctoral fellows have been appointed to positions in Dr. Hampton's laboratory, Dr. P. M. Sanders and Dr. A. Nomura. Mr. B. I. Uppin has joined Dr. Henderson's group and will be eligible for appointment as a post doctoral fellow later this spring.

Staff of the Cancer Research Unit—

Dr. A. R. P. Paterson, Director
Dr. A. Hampton, Associate Professor
Dr. J. F. Henderson, Associate Professor
Dr. J. D. Broome, Research Associate
Dr. P. M. Sanders, Post Doctoral Fellow
Dr. A. Nomura, Post Doctoral Fellow
Mr. B. I. Uppin, appointment pending as Post Doctoral Fellow

Research Assistants and Technicians—

Mr. A. I. Simpson
Mrs. M. Khoo
Mrs. L. Jensen
Mr. B. Blawack
Mr. H. Lutzer
Mrs. M. Roach

Secretary—

Miss R. L. Coxford

Graduate Students—

Mr. M. C. Wang
Mr. L. Brocks

Operating Expenses and Grants

The basic equipment and instrumentation for the Unit and part of the initial purchases of glassware stocks were obtained from a grant of \$95,135.00 provided by the Alberta Division of the Canadian Cancer Society. The operating expenses for the Unit during 1963-64 were \$100,515.00 with the following distribution: salaries, 67%; supplies and expendables, 32%; equipment, 1%. These expenses were met from the National Cancer Institute of Canada operating grant for the Unit (\$89,485.00) and a Medical Research Council of Canada grant to A. R. P. Paterson (\$11,030.00).

The National Cancer Institute has awarded a grant of \$130,130.00 to the Unit for its operations during the forthcoming year. This includes \$9,300.00 for the purchase of permanent equipment and provides stipends for two additional post doctoral fellows in the Unit. In addition, the Medical Research Council has made grants of \$11,000.00 to Dr. A. R. P. Paterson and \$3,000.00 to Dr. A. Hampton.

**Report of Mr. C. E. Noble, Provincial Analyst and
Director of the Industrial Laboratories**

The Department of the Provincial Analyst and Industrial Laboratories completed 13,456 analyses and examinations during the year ending March 31, 1964.

Included in these are the analyses made for the Government Departments of Attorney General, Highways, Lands and Forests, Health, Public Works, Mines and Minerals, Provincial Secretary, and Agriculture including the Veterinary Laboratory. Also, work was done for the Research Council, the University, the Workmen's Compensation Board, Government Purchasing agencies, and the Alberta Liquor Control Board. Inspection of the breweries and periodic chemical checks were also made for the liquor board.

Chemical analyses were made on post mortem specimens for the Provincial and District Coroners, as well as for the hospitals, pathologists, and police agencies in the province. Also, specimens were examined to determine if any chemicals were present which could cause illness.

Physical and chemical tests were performed on various police samples to assist in law enforcement.

Analyses of veterinary samples continue to increase in number and complexity. The causes of trouble increases with the introduction of new weed poisons and insect poisons; and also new paints, oils, etc.

Research and tests were carried out on industrial samples, some to solve troubles or manufacturing problems, and others for improvement and control of products and checks on raw materials.

Assistance was given to prospectors and this type of work increased this last year in spite of the greater availability of other laboratories which do this type of work.

Investigation of engineering problems becomes more frequent and more difficult as the number of products increase. The time spent on individual tests is greater because of the increasing use of new materials and old by-products.

As in previous years, the greatest increase was in investigations into health problems. This includes greater assistance to the Research Council in the detailed analysis of water samples for their surveys. The very rapid increase in medical chemicals complicates the health and police work to a very high degree, and more assistance has to be obtained.

Assistance was given to other University departments, and help was received from some.

Appendices
1963-64

APPENDIX I

FINANCIAL STATEMENTS

STATEMENT A

UNIVERSITY OF ALBERTA

BALANCE SHEET AS AT MARCH 31, 1964

ASSETS

Buildings and equipment:		
Lands, buildings and plant	\$63,587,712.08	
Furnishings and equipment	17,175,259.23	
		\$80,762,971.31
Loan receivable:		
Students' Union re buildings contributions	\$ 206,191.79	
Deduct: Loan payable:		
Government of the Province of Alberta re buildings contributions	206,191.79	
Investments:		
Provincial direct and guaranteed debentures at book value (market value \$192,000.00)		199,430.00
Current:		
Cash on hand and in bank	\$ 196,364.96	
Accounts receivable:		
Sundry debtors	\$ 262,948.70	
Less: Allowance for doubtful accounts	2,500.00	
	\$ 260,448.70	
Government of the Province of Alberta	1,555,469.65	
		1,815,918.35
Accrued interest		11,712.40
Merchandise held for resale		478,343.02
		2,502,338.73
Prepaid expenses:		
Supplies on hand		187,887.77
Other assets:		
Livestock	\$ 49,047.00	
Deposit, Workmen's Compensation Board	8,564.00	
		57,611.00
		\$83,710,238.81
Trust:		
Investments, book value:		
Government of Canada bonds, direct and guaranteed	\$ 1,522,500.00	
Provincial debentures, direct and guaranteed ..	2,899,500.00	
Municipal debentures	6,000.00	
Corporation debentures	7,200.00	
Corporation shares	66,322.96	
	\$ 4,501,522.96	
Cash on hand and in banks	647,094.40	
Loans receivable	78,190.55	
Real estate, shares and sundry, nominal value ..	9.00	
Due from general account	3,754.00	
		5,230,570.91
		\$88,940,809.72

This is the balance sheet referred to in my report of July 21, 1964, addressed to the Board of Governors.

UNIVERSITY OF ALBERTA
BALANCE SHEET AS AT MARCH 31, 1964
LIABILITIES

STATEMENT A

Capital and surplus:			
Capital provided by the Government of the Province of Alberta	\$66,316,699.76		
Capital surplus	9,807,570.94		
			\$76,124,270.70
Long Term Debt:			
Debenture debt:			
5½% debentures, due March 15, 1982	\$ 750,000.00		
Deduct: Sinking fund assets, cash and investments	7,609.08		
	\$ 742,390.92		
Non-interest bearing debentures, due June 1, 1975	300,000.00		
		\$ 1,042,390.92	
Mortgage payable:			
5½% loan repayable in monthly instalments commencing August 1, 1964		2,632,000.00	
Advance repayable:			
Government of the Province of Alberta	1,000,000.00		
			4,674,390.92
Current:			
Bank and treasury branch overdrafts	\$ 247,426.98		
Accounts payable	1,725,657.74		
Accrued interest	7,108.24		
Due to trust account	3,754.00		
			1,983,946.96
Deferred income:			
Fees			77,792.35
Reserves:			
Federal aid funds unexpended	\$ 358,207.05		
University Athletic Board funds unexpended	54,423.37		
Library special purchases	50,000.00		
Library funds unexpended	19,076.43		
Garneau properties	18,055.40		
Workmen's Compensation Board	10,202.31		
Sinking fund	7,609.08		
Provincial Laboratory of Public Health, operating	75,878.98		
Operating, general, Statement C	256,385.26		
		849,837.88	
			\$83,710,238.81
Trust:			
General endowment:			
Rockefeller Foundation	\$ 500,000.00		
Scholarships:			
Escheated estates	\$ 1,074,086.62		
General	731,994.34		
		1,806,080.96	
Research		1,288,757.65	
Grants and loans		130,295.43	
General purposes		1,064,064.87	
Students' unions		318,715.40	
Held on behalf of others		122,656.60	
		5,230,570.91	
			\$88,940,809.72

Edmonton, Alberta, July 21, 1964

I have audited the books and records of the University of Alberta for the year ended March 31, 1964.

Operating Results

Operations for the year ended March 31, 1964 resulted in a deficit of \$68,406.89 as compared with a surplus of \$253,436.30 for the previous fiscal period. Details of operations are shown in Statement B.

The surplus for the year has been carried to the operating reserve. Transactions within the reserve are set forth in Statement C.

Maintenance and upkeep of the building in Edmonton used by the Faculty of Education and the Department of Fine Arts has been provided by the Province direct.

Financial Position

Buildings, plant, furnishings and equipment are stated on the Balance Sheet at original cost. No provision has been made for depreciation, but an independent appraisal completed during the year ended March 31, 1950, indicated that values had been maintained through repairs and renewals, which have been financed from revenue and reserve funds. Buildings in course of construction at Edmonton and Calgary have been included in the assets of the University to extent of construction costs incurred to March 31, 1964.

Investments, general and trust, were verified by actual examination, and agreed with the records of the University.

Inventories of merchandise for resale and supplies on hand are certified as to quantities and prices by officials of the University.

Capital and capital surplus transactions during the year are summarized hereunder:

Capital provided by the Government of the Province of Alberta:

Balance at April 1, 1963	\$57,051,933.84	
Add: Advances during the year:		
Cameron library	2,073,095.77	
Library, Calgary	1,533,910.39	
Education building	451,720.40	
Garneau properties	396,808.88	
Structural engineering building	295,421.13	
Science complex, Calgary	270,925.24	
Engineering complex, Calgary	270,381.55	
Various buildings and site improvements	695,071.76	
Equipment	3,277,430.80	
		\$66,316,699.76
Capital surplus:		
Balance at April 1, 1963	\$ 6,677,381.88	
Add:		
Acquired from trusts, donated funds and construction grants:		
Buildings and sites	2,025,308.00	
Equipment	524,321.12	
Library books	6,976.09	
Income contributions:		
Equipment	17,511.19	
Library books	556,387.51	
	\$ 9,807,885.79	
Deduct: Miscellaneous recoveries	314.85	
		9,807,570.94
		<u>\$76,124,270.70</u>

Final cost to the University of Alberta of McMahon Stadium, Calgary, was determined to be \$1,050,000.00. In settlement thereof the University issued \$750,000.00, 5½% debentures due March 15, 1982 and \$300,000.00 non-interest bearing debentures due June 1, 1975. The interest bearing debentures are guaranteed as to principal and interest by the Government of the Province of Alberta. Non-interest bearing debentures are held in escrow and are to be surrendered from time to time as a gift to the University. Operations of McMahon Stadium are conducted by the McMahon Stadium Society which is required to pay to the University, as at April 30, the net income of the Society for the year. From these funds the University makes payments of interest and provision for sinking fund to retire the interest bearing debentures. No revenues or expenditures of the McMahon Stadium Society are reflected in the accounts of the University.

The mortgage payable, \$2,632,000.00, represents payments received to March 31, 1964 from Central Mortgage and Housing Corporation on a loan being used to finance construction of the food services building and new student residences at Edmonton. Financing has also been provided by grants received from Canada Council, \$1,525,000.00 and through a repayable advance of \$1,000,000.00 from the Government of the Province of Alberta.

Subject to the foregoing, I certify that, in my opinion, the above Balance Sheet is properly drawn up so as to show the true financial position of the University of Alberta as at March 31, 1964, according to information and explanations given to me and as shown by the books of the University, and the accompanying Statement of Revenue and Expenditure correctly sets forth the result of operations for the year ended at that date.

C. K. HUCKVALE, F.C.A.,
Provincial Auditor

UNIVERSITY OF ALBERTA
STATEMENT OF REVENUE AND EXPENDITURE
FOR THE YEAR ENDED MARCH 31, 1964
REVENUE

Grants:

Province of Alberta:

General	\$10,950,000.00
Vocational education students	102,600.00
Clinical research, University of Alberta Hospital, contra	50,000.00
Debt charges, contra	2,470,960.23

\$13,573,560.23

Government of Canada:

Federal aid	2,715,849.25
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\$16,289,409.48

Fees:

Tuition	\$ 3,981,554.46
Examination and special, net	34,064.66

4,015,619.12

Interest on Rockefeller Foundation endowment	\$ 20,000.00
--	--------------

Deduct: Transferred to medical research trust	10,000.00
---	-----------

Grants in aid	40,000.00
---------------------	-----------

University Athletic Board fees, contra	66,534.28
--	-----------

Operating departments, net revenue	5,204.92
--	----------

\$20,426,767.80

EXPENDITURE

Faculties and schools, net	\$12,033,988.57
----------------------------------	-----------------

Maintenance of buildings and grounds	2,396,973.07
--	--------------

Expenditures, contra:

Debt charges	2,470,960.23
--------------------	--------------

Grant to University of Alberta Hospital re clinical research	50,000.00
--	-----------

Provision for University Athletic Board expenses	66,534.28
--	-----------

Public service departments, net	281,470.89
---------------------------------------	------------

Administrative departments, net	848,701.39
---------------------------------------	------------

Other expenditures, net	2,346,546.26
-------------------------------	--------------

\$20,495,174.69

Deficit for the year ended March 31, 1964, carried to

Operating Reserve, Statement C	\$ 68,406.89
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STATEMENT C

UNIVERSITY OF ALBERTA
STATEMENT OF OPERATING RESERVE
FOR THE YEAR ENDED MARCH 31, 1964

Balance as at April 1, 1963	\$ 352,713.78
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Add: Proceeds from disposal of equipment	4,484.18
--	----------

\$ 357,197.96

Deduct:

Deficit for the year ended March 31, 1964	\$ 68,406.89
---	--------------

Transfer to Provincial Laboratory of Public Health	
--	--

operating reserve:

Excess of revenue over expenditure	17,819.06
--	-----------

Transfer to Garneau properties reserve	14,586.75
--	-----------

100,812.70

Balance as at March 31, 1964	\$ 256,385.26
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APPENDIX II

Full-Time Academic Staff Numbers

Faculty School or Service	Total	Deans	Directors	Professors	Associate Professors	Assistant Professors	Lecturers	Instructors
Agriculture	43	1	....	15	17	8	1	1
Arts	130	1	....	18	34	67	10	..
Science	129	1	....	23	55	48	....	2
Arts and Science, Calgary	104	1	....	5	30	60	8	....
Commerce	20	1	....	....	6	12	1	....
Dentistry	16	1	....	5	6	3	1	....
Education	65	1	....	13	29	20	2	....
Education, Calgary	25	1	....	2	10	11	....	1
Engineering	69	1	....	14	32	22	....	....
Graduate Studies	1	1	....	....	....	....	....	....
Household Economics	6	....	1	....	2	3	....	....
Law	7	1	....	2	2	....	....	....
Medicine	*65	1	....	*18	*22	*23	1	....
Nursing	6	....	1	....	....	2	3	....
Pharmacy	9	1	....	1	4	1	1	1
Physical Therapy and Occupational Therapy	6	....	1	....	....	3	2	....
Physical Education	30	....	1	3	6	13	2	5
Evening Credit Program & Summer Session	1	....	1	....	....	....	....	....
Evening Credit Program & Summer Session, Cal.	1	....	1	....	....	....	....	....
Computing Centre	3	....	....	....	1	2	....	....
Provincial Laboratories of Public Health	5	....	2	....	2	....	1	....
Banff School of Fine Arts	1	....	1	....	....	....	....	....
Total Teaching and Research Staff	742	13	9	119	258	300	33	10
*Includes geographic appointments	(18)	....	....	(8)	(7)	(3)	....	....
Administrative Staff								
President's Office, Edmonton	5	....	....	....	....	....	....	....
Principal's Office, Calgary	2	....	....	....	....	....	....	....
Registrar's Office, Edmonton	5	....	....	....	....	....	....	....
Registrar's Office, Calgary	1	....	....	....	....	....	....	....
Bursar's Office, Edmonton	7	....	....	....	....	....	....	....
B. siness Office, Calgary	1	....	....	....	....	....	....	....
Librarians	41	....	....	....	....	....	....	....
Dietitians	4	....	....	....	....	....	....	....
Others	36	....	....	....	....	....	....	....
Total regular full-time staff	844	....	....	....	....	....	....	....
Trust appointments	11	....	....	....	....	....	....	....
TOTAL	855	....	....	....	....	....	....	....

NOTES:

1. A few Professors are included with "Administrative Staff" where the major part of their duties involves University administrative work.
2. Part-time staff, such as Teaching Assistants, Clinical Assistants, etc. are not included.

APPENDIX III

Academic Staff Appointments and Promotions

Faculty of Agriculture

Jackson, Harold, M.Sc., Assistant Professor of Dairy Science
 Winter, G. R., B.Sc., M.Sc., Ph.D., Associate Professor of Agricultural Economics
 Preston, Thomas Alexander, M.A., Associate Professor of Agricultural Engineering

Faculty of Arts

Klatte, William Frederick, M.A., Ph.D., Assistant Professor of Modern Languages (German)
 Glandfield, Frederick David, B.Ed., M.A., Assisatnt Professor of English
 Greaves, Anthony Albert, Dip. Spanish Studies, B.A., Assistant Professor of French, Calgary
 De Luna, Frederick, A., M.A., Ph.D., Assistant Professor of History
 Robertson, Howard Stephen, B.A., AM, Ph.D., Associate Professor of French
 Ellis, John Martin, B.A., Assistant Professor of German
 Cairns, A. T. J., M.A., Lecturer in English, Calgary
 Gordon, Donald, R., B.A., M.A., Assistant Professor of Political Science, Calgary
 Samuel, George, M.A., Lecturer in English
 Brown, Wallace, M.A., Assistant Professor of History
 Frazer, Miss Frances M., B.A., M.A., Assistant Professor of English
 Hargreaves, Henry A., M.A., Ph.D., Assistant Professor of English
 Zaitzeff, Serge Ivan, B.A., M.A., Lecturer in Modern Languages (Calgary)

Griffen, Ernest George, BS, AM, Ph.D., Assistant Professor of English
 Qureshi, Saleem M. M., M. A., LL.B., Ph.D., Assistant Professor of Political Economy
 Schaarschmidt, Gunther, Lecturer in Russian
 Smeaton, Barney Hunter, B.A., M.A., Ph.D., Associate Professor of English, Calgary
 Cox, David, B.Sc. M.A., Assistant Professor of Political Science, Calgary
 Bellette, A.F., B.A., M.A., Lecturer in English, Calgary
 Luethy, Ivor Charles Edward, M.A., Professor of Modern Languages, Calgary
 Konczacki, Zbigniew Andrzej, B.Sc., B.Econ., Associate Professor of Economics
 Hague, Wahidul, M.A., MS, Assistant Professor of Economics
 Kalinowsky, Michael, Dip. (Ecole Supérieure de Commerce, Paris), Lecturer in French
 Nelson, James Malcolm, B.A., M.A., Assistant Professor of English
 Guy, E. F., M.A., Ph.D., Associate Professor and Head of Department of English, Calgary
 Churchley, F. E., M.A., Ed.D., Associate Professor and Head, Department of Fine Arts, Calgary
 Heymann, F. G., Ph.D., Professor and Head, Department of History, Calgary
 Oyler, J. E., M.A., Ph.D., Associate Professor and Head, Department of Modern Languages, Calgary
 Penlhum, T. M., M.A., B.Phil., Professor and Head, Department of Philosophy and Classics, Calgary
 Inlow, E. B., AB, M.A., Ph.D., Associate Professor and Head, Department of Political Science, Calgary
 Schonfield, A. E. D., M.A., Dip. Institute of Psychiatry, Associate Professor and Head, Department of Psychology, Calgary
 Peacocke, Charles Thomas, B.Ed., B.A., M.F.A., Assistant Professor of Drama
 Parker, Howard Arthur, M.A., Assistant Professor of Sociology
 Mills, Donald L., B.A., M.A., Ph.D., Associate Professor and Head, Department of Sociology and Anthropology, Calgary
 Henney, W. D. B., B.A., B.D., D.Phil., Assistant Professor of History
 Mitchell, Harvey, B.A., M.A., Ph.D., Associate Professor of History and Secretary of Department of History, Calgary
 Bryan, Alan Lyle, M.A., Ph.D., Assistant Professor of Anthropology
 Hirabayashi, Gordon K., M.A., Ph.D., Associate Professor and Acting Head, Department of Sociology and Anthropology
 Forbis, R. G., M.A., Ph.D., Assistant Professor of Anthropology, Calgary
 Schwyzer, Hubert, R. G., B.A., M.A., Lecturer in Philosophy
 Bowering, George Harry, B.A., Lecturer in English, Calgary
 Malcolm, John, M.A., Ph.D., Assistant Professor of Philosophy
 MacNeish, Richard Stockton, M.A., Ph.D., Professor of Archaeology
 Pragnell, Bartley, R., Dip. (Winnipeg School of Art), Dip. (School of Art and Design, Montreal), Assistant Professor of Art
 McCaughey, Gerald Sheldon, B.A., M.A., Assistant Professor of English
 Munsat, Stanley, AB, AM, Assistant Professor of Philosophy, Calgary
 O'Grady, Geoffrey Noel, B.A., Assistant Professor of Linguistics
 Eaton, George Eugene, B.A., Ph.D., Assistant Professor of Economics
 Nettler, Gwynn, AB, M.A., Ph.D., Associate Professor of Sociology
 Buck, Robert J., B.A., M.A., Ph.D., Associate Professor and Head, Department of Classics
 James, Robert L., M.A., Ph.D., from Associate to Professor of Sociology
 Wiedner, D. L., B.A., AM, Ph.D., Associate Professor and Head, History Department

Faculty of Commerce

Dulat, Harikirpal Singh, M.A., LL.B., MBA, Assistant Professor of Commerce
 Ford, Harvey Wilson, B.E., B.Com., Assistant Professor of Commerce
 Denham, Ross Alan, B.Com., C.A., Lecturer in Commerce
 Harris, Derald A., B.Sc. Eng., MBA, Assistant Professor of Commerce

Bandun, Walter Robert, B.Sc. Eng., MBA, Assistant Professor of Commerce
Losie, Robert, W., B.Com., C.A., Assistant Professor of Commerce and Administrative Officer, Faculty of Commerce, Calgary

Faculty of Education

Blank, Stanley S., M.A., Ph.D., Assistant Professor of Educational Psychology, Calgary
Lambert, Roland Aime, M.Ed., Ph.D., Associate Professor of Educational Psychology, Calgary
Pitt, Edwin L., M.A., Assistant to the Dean, Faculty of Education, Calgary
Gallagher, James Emmet, B.Ed., Assistant Professor of Industrial and Vocational Education
Jensen, Thomas Ronald, BS, M.Ed., Assistant Professor of Education
Regan, John Owen, B.A., M.Ed., Assistant Professor of Secondary Education
Lawson, Robert Frederick, M.A., Ph.D., Assistant Professor of Educational Foundations, Calgary
Lindstedt, S. A., B.Sc., Head, Department of Curriculum and Instruction, Calgary
Woodworth, J. G., B.A., B.Ed., Ed.D., Professor and Head of Educational Psychology, Calgary
Anderson, R. N., B.A., B.Ed., M.A., Head of Educational Foundations, Calgary
Cheal, J. E., M.Ed., LRSM, ARCT, Associate Professor and Head of Educational Administration, Calgary
Monod, Mrs. Madeleine Jacqueline, B.Ed., Assistant Professor of Secondary Education
Dannenmaier, William Dean, B.A., M.A., Associate Professor of Educational Psychology

Faculty of Engineering

El-Kharadly, M.M.Z., B.Sc., Ph.D DIC, Assistant Professor of Electrical Engineering
Loov, Robert Edmund, B.Sc., Assistant Professor of Engineering, Calgary
Stromsmoe, Keith Allan, B.Sc., M.S., Assistant Professor of Electrical Engineering
Neville, A. M., MC, B.Sc. (Eng), M.Sc., Ph.D., Professor of Civil Engineering and Chairman of Division of Engineering, Calgary
Bellow, Donald Grant, BASc., M.Sc., Ph.D., Assistant Professor of Mechanical Engineering
Pashniak, Daniel Walter, B.S., M.S., Assistant Professor of Mechanical Engineering

Faculty of Graduate Studies

Fostvedt, T., B.Sc., SM, Associate Professor of Mathematics and Assistant Dean, Faculty of Graduate Studies

Faculty of Law

Head, Ivan Leigh, B.A., LL.B., LL.M., Associate Professor of Law

Faculty of Medicine

Graham, William Hugh, M.D., M.Ch., B.A.O., Instructor in Anaesthesia
Moonie, George Thomas, B.A., MD., Instructor in Anaesthesia
Henderson, Joseph Franklin, MS, Ph.D., Associate Professor of Biochemistry
Nelson, Thomas Robert, MB., Ch.B., MRCOG, FRCS(C), Clinical Associate Professor of Obstetrics and Gynaecology
Leeson, Thomas Sydney, M.A., M.D., M.B., B.Chir., Professor and Head of Anatomy
Henderson, Ruth McClintock, MS., Ph.D., Assistant Professor of Physiology
Paranchych, William, B.Sc., Ph.D., Assistant Professor of Biochemistry
Marshall, Frederick Chester, B.Sc., MD, FRCS(C), Instructor in Urology
Hyndman, Charles Frederick, M.D., C.M., Assistant Clinical Professor in Radiology
Weckowicz, Tadeusz Eugenius, MBChB, DPM, Ph.D., Assistant Professor of Psychology and Psychiatry
Taylor, Jack Dean, M.Sc., Ph.D., Assistant Professor of Pharmacology
Craddick, R. A., B.Sc., M.A., Ph.D., Assistant Professor of Psychiatry
Hampton, Alexander, B.A., M.Sc., Ph.D., Associate Professor of Biochemistry
Laurenson, Rae Duncan, MB, Ch.B., Associate Professor of Anatomy

Ball, Norman John, B.A., MB, Ch.B., CAO, MD, Bacteriologist
Goodman, Yvonne Elizabeth, B.Sc., Assistant Bacteriologist, Provincial Laboratory,
Public Health
Schonbaum, Gregory Richard, B.Sc., Ph.D., Associate Professor of Biochemistry
Bell, Harold Edwin, B.Sc., MD, FACP, Assistant Professor of Pathology
Kling, Samuel, B.A., MD, FRCS(C), Director of Continuing Medical Education

Faculty of Pharmacy

Hlynka, John Nicholas, B.Sc., M.Sc., Lecturer in Pharmacy
Moskalyk, Richard Edward, BSP, M.Sc., Assistant Professor of Pharmacy
Edmonson, Miss Wilhelmena Agnes, B.Sc., M.Sc., Instructor in Pharmacy

School of Physical and Occupational Therapy

Dardier, Miss Esme, MCSP, Lecturer in Physical and Occupational Therapy

School of Physical Education

Elliott, G. M., B.Sc., Special Dip. (Carnegie College, Leeds), Assistant Professor
of Physical Education
Caudwell, Miss Margaret, Lecturer in the School of Physical Education
Morford, W. Robert, MPE, Assistant Professor in Physical Education
Darwick, Miss Doris, B.S. Educ., Instructor in Physical Education
Conger, Miss Patricia Ruth, B.S. Educ., Instructor in Physical Education
Smith, Miss Joan Iris, B.Ed., Instructor in Physical Education
Reichenbach, Peter, J., B.Sc., M.Sc., Assistant Professor of Physical Education,
Calgary
Goodwin, L., B.A., M.Ed., Ph.D., Professor of Physical Education, Calgary
MacNab, Ross B. J., B.S., M.A., Assistant Professor of Physical Education
Fournier, Lionel Joseph, B.Com., B.A., B.Sc., M.A., Assistant Professor of Physical
Education

Faculty of Science

Ahja, Jagdish Chand, M.A., Ph.D., Assistant Professor of Mathematics, Calgary
Bercov, Ronald, M.Sc., Ph.D., Assistant Professor of Mathematics
Fraga, Serafin, Lic. Dr., Assistant Professor of Chemistry
Sanders, James, B.A., M.A., Ph.D., Associate Professor of Mathematics
Coulson, Michael R.C., B.A., M.A., Assistant Professor of Geography, Calgary
Myres, Timonhthy, M.A., Ph.D., Assistant Professor of Zoology, Calgary
Sorenson, T. S., B.Sc., Ph.D., Assistant Professor of Chemistry, Calgary
Meir, Amram, M.Sc., Ph.D., Assistant Professor of Mathematics, Calgary
Ogilvie, Robert Townley, M.A., Ph.D., Assistant Professor of Botany, Calgary
Kewley, Roger, B.A., Ph.D., Annual Assistant Professor of Chemistry
Rao, Mathukumalli Venkata Subba, M.A., MSc., Ph.D., Associate Professor of
Mathematics
Martin, John Scott, B.A., Ph.D., Assistant Professor of Chemistry
Poesche, Werner Herbert, Vordiplom. Chem. Diplom., Annual Assistant Professor
of Chemistry
Tanner, Dennis D., B.S., MS, Ph.D., Annual Assistant Professor of Chemistry
Edgington, Eugene Sinclair, BS, MS, Ph.D., Professor of Psychology, Calgary
Lakshmikantham, V., M.A., Ph.D., Associate Professor of Mathematics, Calgary
Razavy, Johnsen Modarres, M.A., Ph.D., Assistant Professor of Physics
Hamill, Louis, MS., Ph.D., Assistant Professor of Geography, Calgary
Gibson, David, B.A., M.A., Ph.D., Assistant Professor of Psychology, Calgary
Hartland-Rowe, R. C. B., B.Sc., Ph.D., Associate Professor and Head of Depart-
ment of Biology, Calgary
Hyne, J. N., B.Sc., Ph.D., Associate Professor and Head of Department of Chemistry,
Calgary
Nelson, J. G., B.A., M.A., Ph.D., Associate Professor and Head of Department of
Geography, Calgary
Oliver, T. A., M.Sc., Ph.D., Associate Professor and Head of the Department of
Geology, Calgary

Peck, J. E. L., M.Sc., Ph.D., Professor and Head of the Department of Mathematics, Calgary

Challice, C. E., B.Sc., Ph.D., Professor and Head of the Department of Physics, Calgary

Mehra, Krishen L., M.A., Ph.D., Assistant Professor of Mathematics

Stiles, David Austin, Assistant Professor of Chemistry, Calgary (part-time)

Moser, Leo, B.Sc., M.A., Ph.D., Professor and Associate Head, Department of Mathematics

Abrahamsson, Kurt-Viking, Fil. Lic. (Helsinki), Assistant Professor of Geography

Coombes, Charles Allen, B.A., Ph.D., Assistant Professor of Physics, Calgary

Ironside, Robert Geoffrey, B.A., Assistant Professor of Geography

La Roi, George Henri, B.A., M.A., Assistant Professor of Botany

Klawe, Janusz J., Dip Com (Grenoble), M.A., Associate Professor of Geography

Nihei, Taiichi, B.S., Doctor of Sc. Biochemistry, Assistant Professor of Biochemistry

Sandin, R. B., M.A., Ph.D., Professor of Chemistry

Strausz, Otto P., Lic. Eotvos Lorand, Budapest, Ph.D., Assistant Professor of Chemistry

Bergmann, John F., AB, M.A., Ph.D., Associate Professor of Geography

Bachelor, Frank W., BS, Ph.D., Assistant Professor of Chemistry

Weir, Mary S., B.Sc., Ph.D., Part-time Assistant Professor of Chemistry, Calgary

Walley, Roc Edward, AB, Ph.D., Assistant Professor of Psychology

Kanasewich, Ernest Raymond, M.Sc., Ph.D., Assistant Professor of Physics

Chow, Yuan-Lung, B.Sc., Ph.D., Annual Assistant Professor of Chemistry

Newbery, Arthur Christopher Rolls, B.A., M.A., Ph.D., Assistant Professor of Mathematics, Calgary

Hospers, Jan, M.A., Ph.D., Professor of Geophysics

Forbes, Robert L., B.Sc., M.Sc., Lecturer in Mathematics, Calgary

Lambert, Richard St. J. M., B.A., M.A., Ph.D., Associate Professor of Geology

Arai, Hisao P., AB, Ph.D., Assistant Professor of Zoology, Calgary

Small, George Roger, B.A., M.A., Instructor in Physics

Gardiner, Brian George, B.Sc., Ph.D., Assistant Professor of Zoology

Smillie, Keith William, B.A., M.A., Ph.D., Associate Professor, Department of Mathematics and Computing Centre

Simony, Philip Steven, M.Sc., Assistant Professor of Geology, Calgary

Boag, David Archibald, M.Sc., Assistant Professor of Zoology

Rule, Mrs. Brendan Gail, B.A., M.A., Ph.D., Part-time Assistant Professor of Psychology

Woods, S. B., M.A., Ph.D., Associate Professor and Assistant Chairman, Department of Physics

Administration

Hardy, R. M., B.Sc., D.Sc., M.Sc., Dean of Engineering

Armstrong, H. S., M.A., Ph.D., from Dean of Science to Vice-President (Academic)

Wyman, Max, B.Sc., Ph.D., Professor and Head of Mathematics and Dean of Science

Stadelbauer, Helen, Miss, B.Sc., M.A., Associate Professor of Fine Arts and Fine Arts Education and Administrative Officer of the Division of Art, Calgary

Huff, Miss A. Patricia, M.Sc., Nursing Director, Student Health Services

Hawes, Harold R., B.Sc., Secretary, Campus Planning Committee to be Assistant to the President

Terentiuk, Fred, B.Sc., M.A., Ph.D., Adviser to Men Students and Associate Professor of Physics, Calgary

Fish, Mrs. Frank H., Adviser to Women Students, Calgary

Morisset, G. Rodney, B.Ed., M.A., Assistant to the Dean of Arts and Science, Calgary

Phillips, R. E., B.Sc., Associate Professor of Electrical Engineering and Superintendent of Buildings

Morgan, L. P., B.A., Associate Registrar

Burns, W. A. D., B.A., Assistant Registrar

Smith, W. A. S., B.A., M.A., Ph.D., Associate Professor of Psychology and Assistant Dean of Arts
 Newbound, K. B., M.Sc., Ph.D., Professor of Physics and Associate Dean, Faculty of Science
 Jacka, R. C., B.Sc., SM, Associate Professor of Mathematics and Assistant Dean, Faculty of Science
 Adams, Paul R., Adviser to Men Students and Administrator of Student Awards, Calgary
 Jones, John Robert Blakely, DSO, OBE, CD, B.Sc., Campus Development Officer

Library

Allingham, Mrs. Margot Louise Poole, B.A., B.L.S., Librarian, Calgary
 Whitley, William Henry, B.A., A.M., Ph.D., B.L.S., Periodicals Librarian
 Auxier, Miss Margaret, B.A., BA in Lib., Reference Librarian
 Farnell, Mrs. Margaret I. H., B.A., B.S. in L.S., General Reference Librarian
 Fox, Miss Elizabeth A., B.A., B.L.S., Librarian
 Grieve, Miss Dorothy, B.A., B.L.S., Librarian, Calgary
 Kelley, Sheila Joan, B.Sc., B.L.S., Librarian
 Hussain, Mohammad Raiz, M.A., MSLS, Librarian
 Fenton, Miss Yvonne, B.A., A.L.A., Chief Cataloguer
 Lytwynec, Mrs. Natalie, Certificate (Library School New Zealand) Cataloguer, Cataloguing Department
 Lepper, Maurice Gordon Storrar, B.Sc., B.L.S., Librarian, Calgary Campus
 McIvor, Miss Moira Marion, B.A., B.L.S., Librarian, Calgary
 Olson, Eugene George, B.A., B.L.S., Librarian
 Purkis, Miss Lloane Gayle, B.A., B.L.S., Librarian
 Jordan, Peter Alex, B.A., B.L.S., Librarian, Calgary
 Butcher, Miss Theresa, B.A., B.L.S., Librarian, Calgary
 Lee, Miss Ann Marie, B.A., B.L.S., Librarian
 Hanlon, Peter, B.A., B.L.S., First Assistant, Cataloguing Department
 Smith, Miss Helen M., B.A., B.L.S., Order Librarian, Calgary

Extension

Shaw, James Albon, B.S., M.A., Assistant Professor in Extension
 Wright, Gerald Howard, B.A., Assistant Professor in Extension
 Petersen, Thomas Alfred, B.Sc., M.A., Assistant Professor and Agricultural Secretary
 Lockwood, Charles McDonald, Dip.Bus.Adm., B.A.Sc., Associate Professor in Extension
 Chapman, Robert S., M.Ed., Associate Professor in Extension, Calgary

Student Counselling Service

Rempel, Peter P., B.A., B.Ed., Ph.D., Associate Professor of Psychology and Senior Counsellor of Student Counselling Services

APPENDIX IV **Leave of Absence**

Adams, Peter F. G., Assistant Professor, Department of Civil Engineering
 *Affleck, A., Associate Professor, School of Physical Education
 Affleck, Mrs. Muriel, Associate Professor of Elementary Education
 Altmann, Stuart A., Professor, Department of Zoology
 *Anton, F. R., Associate Professor, Department of Political Economy, Calgary
 Baron, M. J., Assistant Professor of Civil Engineering
 Beaton, Miss Mary Anne, Assistant Professor of Education, Calgary
 *Betts, D. D., Associate Professor, Department of Physics
 *Bhatia, A. B., Professor, Department of Physics
 *Burwash, R. A., Associate Professor, Department of Geology
 Crichton, Dr. E. C., Provincial Laboratory, Calgary

Crighton, A. B., Associate Professor, Department of Fine Arts
 Coulson, W. F., Assistant Professor, Division of Secondary Education
 *Dawson, W. F., Associate Professor, Department of Political Science
 Dewar, J., Assistant Professor, School of Physical Education, Calgary
 Doige, A. G. Assistant Professor, Mechanical Engineering
 Duby, John, Associate Professor of Mechanical Engineering
 Eshel, Abraham, Assistant Professor, Department of Mechanical Engineering
 Feltham, G. A., Professor of Accounting
 Glochner, Peter, Associate Professor, Civil Engineering
 Goundrey, G. K., Associate Professor of Economics
 Hertzman, L. H., Assistant Professor of History
 Kelly, Donald H., Assistant Professor, Department of Electrical Engineering
 *Mackie, G. O., Associate Professor, Department of Zoology
 McArthur, H. R., Associate Professor, Mechanical Engineering, Calgary
 McDonald, B. H., Assistant to the President
 Nay, Marshall A., Assistant Professor of Secondary Education
 Olser, Alan, Lecturer in English
 Preshing, W. A., Associate Professor of Commerce
 *Smillie, L. B., Associate Professor, Department of Biochemistry
 Sherbaniuk, D. J., Associate Professor of Law
 Trollope, Mrs. Zenia, Assistant Professor of Mathematics
 *Wood, F. W., Associate Professor, Department of Dairy Science

APPENDIX V

Retirements

Hardy, William George, M.A. (Toronto), Ph.D. (Chicago), Professor and Head of Classics, Faculty of Arts

APPENDIX VI

Deceased

Wheeler, Benjamin Morrill, MBE, MD (Alberta), FRCP(C), Clinical Professor of Medicine
 MacLennan, Alexander Havelock, B.Sc., MD (Alberta), FACS, MRCOG, Clinical Professor of Obstetrics and Gynaecology
 MacDonald, Gordon Reid, B.Sc., MD (Alberta), FACP, Assistant Professor of Pathology
 Taylor, Geoffrey Bradford, M.Sc., Registrar

APPENDIX VII

Resignations

Brother Bonadventure, Assistant Professor of History
 Garland, Dr. G. D., Professor and Associate Head of Physics
 Frache, Mrs. E. June, Assistant Professor of Health Education
 Stein, Dr. William, Assistant Professor of Anthropology, Calgary
 Champion, Miss Margaret, Assistant Professor of Household Economics
 von Hohenbalken, Dr. Balder, Assistant Professor of Political Economy
 Owen, E. E., Assistant Professor of Secondary Education
 Hendrickson, Miss Mary P., Assistant Professor, Physical Education, Calgary
 Abu-Laban, B. R., Assistant Professor of Sociology
 Fitzgerald, Dr. Donald, Assistant Professor of Educational Psychology
 Madden, Miss Margaret M., Lecturer in Nursing
 Greene, G. K., Assistant Professor of Music in Extension and Fine Arts
 Williams, Dr. C. Glyn, Assistant Professor of Political Economy
 Trainor, Dr. L. E. H., Professor of Physics and Executive Secretary of the Theoretical Physics Institute

*Indicates Sabbatical Leave

Patton, Miss Adery C. A., Lecturer in Mathematics
 Andrews, E. E., Assistant Professor of Elementary Education
 Dey, Jean Downie, Associate Professor of Elementary Education
 Ritchie, Charles F., Assistant Professor in Extension
 Moore, Dr. A. W., Assistant Professor of Soil Science
 Lambert, Dr. J. F., Associate Professor of Philosophy
 Elley, Dr. W. B., Assistant Professor of Educational Psychology
 Alexander, J. F., Assistant Professor of Physical Education
 Farrel, B. H., Associate Professor of Geography
 Mandel, Dr. Eli, Associate Professor of English
 Brooker, B. W., Superintendent of Buildings
 Wine, John J., Student Counselling Services
 Eccles, Dr. W. J., Professor of History
 MacCannell, Dr. E. H., Assistant Professor of Sociology
 Radcliff, Dr. P. E., Assistant Professor of Philosophy
 Cragg, Dr. L. H., Vice-President
 Reicher, Daniel, Chief Cataloguer, Rutherford Library
 Sommer, Dr. Robert, Assistant Professor of Psychology
 Aziz, Khalid, Assistant Professor of Petroleum Engineering
 Harrold, Dr. J. H., Associate Professor of Physics
 Rees, Philip, Librarian, Calgary
 Carver, J. William, Business Officer, Calgary
 Connolly, P. H., Librarian, Boreal Institute
 Thompson, Dr. Margaret W., Assistant Professor of Human Genetics
 Barton, H. A., Assistant Professor of History
 Fischer, Dr. Heinz, Assistant Professor of German
 Young, B. S., Assistant Professor of Geography
 Lown, Dr. J. W., Annual Assistant Professor of Chemistry
 Bowen, Dr. J. E., Assistant Professor of Education, Calgary
 Mielke, Dr. Bruce, Instructor in Pathology
 Mendel, Dr. V. E., Assistant Professor of Animal Science
 Des Champs, Allan, Agricultural Secretary, Department of Extension
 Sorokin, Mrs. H., Cataloguing Librarian, Extension Library
 Taschuk, Mrs. Diana, Reference Department, Rutherford Library
 Williams, Gordon D., Assistant Professor, Department of Geology
 Pribram, Dr. H. T. W., Instructor, Department of Radiology
 Asplund, Dr. J. Malcolm, Assistant Professor, Animal Nutrition
 Neilsen, Ralph, Librarian, Rutherford Library and Boreal Institute
 Jack, Ross, S., Assistant to the Principal, University of Alberta, Calgary
 Hall, Dr. R. M., Instructor in Radiology
 Lupton, Mrs. Carolyn, Librarian, Cataloguing Department, Rutherford Library
 Taylor, Dr. Malcolm G., Principal, University of Alberta, Calgary
 Thompson, Dr. J. S., Professor of Anatomy
 Armstrong, Mrs. Janet, Instructor of Physical Education
 Wargo, Mrs. Lynn, Psychologist, Department of Psychiatry
 Haley, Dr. Frank Cecil, Assistant Professor, Department of Anaesthesia
 Pitt, E. L., Assistant Dean of Education, University of Alberta, Calgary
 Parr, Dr. J. Gordon, Professor of Metallurgy
 Calaresu, Dr. Franco, Instructor in Physiology
 James, Dr. Robert L., Associate Professor of Sociology
 Kyle, Mr. John D., Assistant Professor of Commerce
 Schmid, Dr. Gerhard, Assistant Professor of Chemistry
 Brown, Wallace, Assistant Professor of History
 Brown, Dr. R. Craig, Assistant Professor of History, Calgary
 Fowler, Dr. John R., Director, School of Rehabilitation Medicine
 Troutner, Dr. L. F., Assistant Professor, Department of Educational Foundations
 Baird, Donald, Assistant Librarian
 Kharadly, Dr. M. M. Z., Associate Professor, Electrical Engineering

Hood, Mrs. Ruth E., Extension Library
 Manchester, Dr. F. D. Associate Professor, Department of Physics
 McTaggart, Dr. Andrew N., Assistant Professor, Psychiatry
 Suzuki, Dr. David Takayoshi, Assistant Professor of Genetics
 Wallace, Dr. W. J., Associate Professor of Chemistry
 Boal, F. W., Assistant Professor of Geography, Calgary

APPENDIX VIII

Visiting Lecturer Program—April 1, 1963-March 31, 1964

Agriculture

- | | |
|-------------------------|---|
| Dr. K. L. Blaxter | —Hannah Dairy Research Institute, Ayr, Scotland—a world authority on nutrition and physiology of sheep and cattle—sponsored by the Nuffield Foundation and the National Research Council of Canada. Awarded the Gold Medal of the Royal Agricultural Society. |
| Dr. John Pesek | —Iowa State University—an international authority on the use of linear programming for determination of optimum soil management programs for crop production. |
| Dr. Ralph Nelson | —South Dakota State College—presented a series of seminars dealing with relationships between economic progress and agricultural improvements in developing countries. |
| Dr. Alden Crafts | —Head of the Department of Botany, University of California |
| Dr. R. R. Riel | —Professor of Food Science, Laval University |
| Professor S. V. Wantrup | —Professor of Agricultural Economics, University of California—a world authority on the economics of irrigation developments. |

Arts and Science (Calgary)

- | | |
|------------------------------|--|
| Dr. W. S. Avis | —Visiting Research Professor—engaged in work under the auspices of the Lexicographical Centre. |
| Dr. Gwyn Jones | —University of Wales |
| Professor F. E. L. Priestley | —University of Toronto |
| Dr. A. S. Watt | —University of Cambridge |
| Dr. N. Tinbergen | —University of Oxford |

Computing Science

- | | |
|------------------------|---|
| Professor Alfred Renyi | —Director of Mathematics Centre, University of Budapest.
<i>"Information Theory"</i> (Staff and Students Only) |
|------------------------|---|

English and Computing Centre (Calgary)

- | | |
|----------------|--|
| Rev. A. Morton | —Culross, Fife. Distinguished for work on the authenticity of parts of the scriptures by means of computer analysis. |
|----------------|--|

Geography

- | | |
|-----------------------|--|
| Dr. F. K. Hare | —Dean of Arts and Science, McGill University
Seminar (Staff and Students Only)
Lecture (Public) |
| Dr. J. Lewis Robinson | —Professor and Head, Department of Geography, U.B.C.
<i>"Developments in Geography in Canada"</i> (Staff and Students Only)
<i>"Arctic Resources"</i> (Public) |

- Dr. James E. Vance, Jr. —Associate Professor, Dep't. of Geography, University of California, Berkeley
Seminar on location characteristics of wholesale trade establishments both nationally and within the metropolis. (Staff and Students Only)
"Development of Urbanism in the United States" (Public)
- Dr. Stig Jaatinen —Past Editor of "Terra", "Acta Geographica" and "Fennia" publ. by Geog. Society of Finland. Professor of Economic Geography at Finnish School of Economics.
"The Cultural Geography of the Archipelago, an Example from the S.W. Archipelago of Finland" (Staff and Students Only)
"The Changing Image of Finland" (Public)
- Dr. George Tatham —Professor of Geography and Dean of Students. York University, Toronto
"Geography and the Regional Concept" (Staff and Students Only)
"Geography in the Curriculum" to Edmonton District Teachers' Convention, Jasper Place High School.
- Dr. Samuel Van Valkenburg —Professor of Geography and Director of Graduate School of Geography, Clark University
"Can Europe Unite?" (Public)
- Dr. Paul Wheatley —Professor of Geography, University of California
"Ecological Adaptation in Colonial Malaya" (Public)
"The Origin and Nature of Urbanism in Southeast Asia" (Graduate Students Only)
- Mathematics*
- Dr. Adam Sulinski —Visiting Lecturer, University of British Columbia
- J. Selfridge —University of Washington
- D. Chapman —University of California
- Prof. Z. W. Birnbaum —University of Washington
- A. Hagnal —University of California
- Medicine*
- Dr. R. Gordon Douglas —Professor of Obstetrics and Gynaecology, Cornell Medical College
- Dr. Rene J. Dubos —Professor of the Rockefeller Institute in New York City
- Dr. Frank L. Horsfall, Jr. —Director of the Sloan-Kettering Institute for Cancer Research
- Dr. Peter B. Medawar —Director of the National Institute for Medical Research of Great Britain and Nobel Laureate in Physiology and Medicine in 1960.
- Music*
- Dr. Myron Schaeffer —University of Toronto
 Work in the field of Electronic Music
- Pharmacy*
- Dr. A. H. Beckett —Dean of Chelsea College of Science and Technology
- Dr. S. E. Wright —Head, Department of Pharmacy, University of Sydney
- Dr. W. E. Court —Senior Lecturer in Pharmacognosy, University of Liverpool (Lectures, seminars and discussions to students and staff)

Philosophy

- Professor C. B. McPherson —Political Science Department, University of Toronto
C. D. Rollins (Calgary) —Oberlin College, Ohio

Physics

- Dr. J. W. Berg, Jr. —Professor of Oceanography, Oregon State University
Dr. D. E. Smylie —University of Toronto

Physiology

- Robert Porter —Departmental Demonstrator, University Laboratory of Physiology, Oxford: Research Anatomist visiting Brain Research Institute U.C.L.A. Medical Center (Radcliffe Travelling Fellow in Medical Science)
“*The Pyramidal Projection to Motoneurons of Some Forelimb Muscle Groups*” (Staff and Students Only)
Dr. E. W. Pfeiffer —Associate Professor, Department of Zoology, Montana State University.
“*Studies of Mammalian Renal Form and Function*” (Staff and Students Only)
“*Sex Reversal in Phalaropes*” (Calgary and Edmonton) (Staff and Students Only)

Psychology

- Dr. Paul Fraise —Institute of Psychology, University of Paris

Sociology and Anthropology (Calgary)

- Dr. Guy Rocher —Eminent Sociologist. Member of the Royal Commission on Education for the Province of Quebec. Chairman of the Department of Sociology, University of Montreal
“*The French-Canadian View of Confederation*”

Zoology

- Dr. Alexander Watt, F.R.S. —Cambridge University

APPENDIX IX

SUMMARY OF TOTALS

PART I—WINTER SESSION

	TOTAL		TOTAL		GRAND TOTAL	
	M	F	M	F	62-63	63-64
Section A Day	5458	2633	8091			
Section B Day	137	140	277			
Section C Evening	484	631	1115			
Section D Day	78	16	94			
Section E Day	77	93	170			
Section F Evening	106	38	144			
Section G Evening	7	10	17			
Section H Evening	6347	3561	9908			
TOTAL SECTIONS A to G	51	352	403			
Registered Affiliates					9325	10311
Section H Day						
TOTAL PART I					20	11
PART II—SHORT COURSES						
PART III—SUMMER SESSION						
Section A—Edmonton	1467	1792	3259			
Section D—Banff—Credit	6	19	25			
TOTAL PART III					2858	3284
TOTAL PART III					12203	13606
GRAND TOTAL						

*Combined Total

PART I—WINTER SESSION SECTION A—FULL-TIME DEGREE OR DIPLOMA STUDENT—DAY-TIME

	1st Yr.		2nd Yr.		3rd Yr.		4th Yr.		5th Yr.		Total		TOTAL	
	M	F	M	F	M	F	M	F	M	F	M	F	62-63	63-64
Agriculture														
B.Sc.	55	1	57	2	28	2	32		172	5	150	177		
Pre-Veterinary Medicine	25	1							25	1	11	26		
Total	80	2	57	2	28	2	32		197	6	161	203		
Arts														
B.A.	153	188	200	121	161	120			514	429	825	943		
B.A. Honors	6	9	16	22	21	11	21	11	64	53	125	117		
B.A., LL.B.	41	3	21	2					62	5	96	67		
B.F.A.	4	3	2	3	2				8	6	14	14		
B.Music	3	6	5	7	1				9	13	22	22		
Dip. in Art														
B.A., B.Sc. (Engineering)														
Pre-Architecture	1	1	1	1										
Total	208	210	245	156	185	131	21	11			659	508	1083	1167

	1st Yr.		2nd Yr.		3rd Yr.		4th Yr.		5th Yr.		Total		TOTAL	
	M	F	M	F	M	F	M	F	M	F	M	F	62-63	63-64
Commerce														
B.Com.	163	7	124	5	116	5	90	6	...	...	493	23	391	516
Dental Hygiene														
Diploma ....	...	16	...	20	...	...	...	...	...	...	...	36	39	36
Dentistry														
D.D.S.	57	1	50	1	42	...	40	1	...	...	189	3	170	192
Education														
B.Ed. (Elementary)	22	140	56	282	14	74	6	27	...	...	98	523	473	621
B.Ed. (Secondary)	226	206	230	215	183	121	84	58	...	...	723	600	1343	1323
B.Ed. (Not Specified)	17	31	4	...	...	...	...	...	...	...	17	31	...	48
B.Ed. in Ind. Arts	12	...	...	...	...	...	2	...	...	...	18	...	2	18
B.Ed. in Voc. Ed. ....	...	1	38	9	1	1	...	...	...	...	41	11	83	52
B.Ed. (Elem.) after degree	5	8	...	1	...	...	...	...	...	...	5	9	...	14
B.Ed. (Sec.) after degree	103	37	5	2	...	...	...	...	...	...	108	39	*161	147
B.Ed. (Voc. Ed.) after degree	6	2	...	...	...	...	...	...	...	...	6	2	...	8
Diploma in Education	17	1	...	...	...	...	...	...	...	...	17	1	...	18
Total	410	426	333	509	198	196	92	85	...	...	1033	1216	1977	2249
Engineering														
Chemical .....	...	...	...	...	35	...	41	...	...	...	76	...	67	76
Civil .....	...	...	...	...	34	...	53	...	...	...	87	...	120	87
Electrical .....	...	...	...	...	50	...	53	...	...	...	103	...	103	103
Eng. Physics .....	...	...	...	...	8	1	4	...	...	...	12	1	9	13
Mechanical .....	...	...	...	...	47	...	52	...	...	...	99	...	97	99
Metallurgical .....	...	...	...	...	12	6	6	...	...	...	18	...	14	18
Mining .....	...	...	...	...	...	...	2	...	...	...	2	...	4	2
Petroleum .....	...	...	...	...	...	...	...	...	...	...	...	...	...	8
Not Specified	201	1	146	1	...	...	...	...	...	...	347	2	379	349
Total	201	1	146	1	186	1	211	...	...	...	744	3	801	747
Household Economics														
B.Sc. ....	...	34	...	37	...	27	...	...	...	...	...	98	107	98
Law														
LL.B.	47	2	33	1	37	3	...	...	...	...	117	6	126	123
Medicine														
B.Sc. in M.L.S.	2	24	...	23	2	12	...	...	...	...	...	4	59	66
M.D.	81	11	56	6	52	6	49	6	...	...	238	29	228	267
Total	83	35	56	29	54	18	49	6	...	...	242	88	294	330

	Total		TOTAL	
	M	F	62-63	63-64
Household Economics	...	...	3	...
Law	...	...	...	...
Medicine	...	1	5	1
Nursing	...	10	13	10
Pharmacy	15	6	10	21
Physical Education	...	...	2	...
Physical and Occupational Therapy	...	...	...	...
Science	14	8	18	22
Undergraduate Total	90	125	156	215
Graduate Studies	47	15	51	62
TOTAL—SECTION B	137	140	207	277

SECTION C—PART-TIME DEGREE OR DIPLOMA STUDENTS—EVENING CREDIT PROGRAM

Agriculture	46	59	1	103	105
Arts	25	...	10	25	...
Commerce	...	...	...	...	...
Dental Hygiene	...	...	...	...	...
Dentistry	1	...	...	1	...
Education	370	545	820	915	...
Engineering	...	...	...	...	...
Household Economics	...	...	...	...	...
Medicine	...	2	2	2	2
Nursing	...	12	8	12	...
Pharmacy	...	...	1	...	...
Physical Education	3	...	...	3	...
Physical and Occupational Therapy	...	...	...	...	...
Science	17	3	29	20	...
Undergraduate Total	462	621	974	1083	...
Graduate Studies	22	10	24	32	...
TOTAL—SECTION C	484	631	998	1115	...

SECTION D—FULL-TIME SPECIAL STUDENTS—DAYTIME CLASSES

Agriculture	1	1	1	2	...
Arts	12	6	18	18	...
Commerce	5	...	1	5	...
Dental Hygiene	...	...	...	...	...
Dentistry	...	...	1	...	...
Education	...	1	...	1	...
Engineering	2	...	2	2	...
Household Economics	...	...	1	...	...
Law	...	...	...	...	...
Medicine	...	...	...	...	...
Nursing	...	...	...	...	...
Pharmacy	...	...	...	...	...

Physical Education	1	...	1	1
Physical and Occupational Therapy	43	8	26	51
Science				
Undergraduate Total	64	16	50	80
Graduate Studies	14	...	11	14
TOTAL—SECTION D	78	16	61	94

SECTION E—PART-TIME SPECIAL STUDENTS—DAYTIME CLASSES

Agriculture	4	...	2	4
Arts	13	25	45	38
Commerce .....	...	1	3	1
Dental Hygiene .....	...	...	...	...
Dentistry	7	21	20	28
Education	8	...	7	8
Engineering .....	...	1	2	1
Household Economics .....	...	...	1	...
Law .....	...	3	1	3
Medicine .....	...	13	12	15
Nursing .....	...	1	1	1
Pharmacy	2	1	1	3
Physical Education .....	...	...	1	...
Physical and Occupational Therapy	31	21	36	52
Scene				
Undergraduate Total	65	89	133	154
Graduate Studies	12	4	14	16
TOTAL—SECTION E	77	93	147	170

SECTION F—PART-TIME SPECIAL STUDENTS—EVENING CREDIT PROGRAM

Agriculture	30	16	2	46
Arts	1	...	4	1
Commerce .....	...	...	...	...
Dental Hygiene	61	22	52	83
Education .....	...	...	...	...
Dentistry	3	...	1	3
Engineering .....	...	...	...	...
Household Economics .....	...	...	...	...
Law .....	...	...	...	...
Medicine .....	...	...	1	...
Nursing .....	...	...	...	...
Pharmacy	1	...	...	1
Physical Education .....	...	...	...	...

	Total M	F	TOTAL 62-63 63-64
Physical and Occupational Therapy Science	8	4	8
Undergraduate Total	104	38	108 142
Graduate Studies	2	2	2
TOTAL—SECTION F	106	38	110 144

SECTION G—U.A.C. STUDENTS—PART-TIME AT EDMONTON—EVENING CREDIT PROGRAM

Agriculture	1	1	1
Arts	...	...	...
Commerce	...	...	...
Dental Hygiene	...	...	...
Dentistry	...	...	...
Education	7	9	16
Engineering	...	...	...
Household Economics	...	...	...
Law	...	...	...
Medicine	...	...	...
Nursing	...	...	...
Pharmacy	...	...	...
Physical Education	...	...	...
Physical and Occupational Therapy	...	...	...
Science	...	...	...
TOTAL—SECTION G	7	10	17
TOTAL—SECTIONS A-G	6347	3561	8879 9908

SECTION H—REGISTERED UNIVERSITY OF ALBERTA STUDENTS STUDYING AT ALLIATED INSTITUTIONS

	Total M	F	TOTAL 62-63 62-64
Faculty	...	85	63 85
Nursing	...	264	323 264
B.Sc.	...	...	...
Diploma	...	...	...
St. Stephen's College	2	...	5 2
Prov. Cand. B.D.	8	...	13 8
B.D.	4	...	...
Part Time B.D.	...	...	...
Undergraduate Total	14	349	404 363
Graduate Studies	37	3	42 40
Medical Trainees	51	352	446 403
TOTAL—SECTION H	6398	3913	9325 10311
TOTAL—PART I	...	...	...

PART II—SHORT COURSES

Nursing Diploma in Advanced Practical Obstetrics

TOTAL—PART II

...	11	20	11
...	11	20	11

PART III—SUMMER SESSION 1964 SECTION A—EDMONTON

Agriculture
Arts
Commerce
Dental Hygiene
Dentistry
Education
Engineering
Household Economics
Law

Degree/Diploma	U.A.C. Students	Special	Total
M F Total	M F Total	F Total	M F Total
1	1	1	1
87	66 153	20 44	87 *291 199
7	2 9	1	8 2 15 10
2	2	2	2
984	1506 2490	76 158	1081 1615 2296 2696
3	3	2	5 4 5
...	5 5	3 3	8 15 8
...

Medicine (M.L.S.)
Nursing
Pharmacy
Physical Education
Physical and Occupational Therapy
Science

Degree/Diploma	U.A.C. Students	Special	Total
M F Total	M F Total	F Total	M F Total
...
2	12 12	1 1	1 14 10 14
10	1 3	1	2 1 5 3
...	4 14	...	10 4 15 14
62	16 78	2 8	69 18 * 87

Undergraduate Total
Graduate Studies
TOTAL—SECTION A

1158	1612	2770	17	35	52	117	102	219	1292	1749	2659	3041
172	41	213	...	...	...	3	2	5	175	43	174	218
1330	1653	2983	17	35	52	120	104	224	1467	1792	2833	3259

*combined total

SECTION B—BANFF—University Credit

Arts
Education
Undergraduate Total
Graduate Studies
TOTAL—SECTION B
TOTAL—PART III

1	1	2	...	...	...	1	8	9	2	9	11	11
3	6	9	...	...	...	1	4	5	4	10	13	14
4	7	11	...	...	...	2	12	14	6	19	24	25
...	...	...	...	...	...	...	...	...	...	...	1	...
4	7	11	...	...	...	2	12	14	6	19	25	25
1334	1660	2994	17	35	52	122	116	238	1473	1811	2858	3284
...	...	...	...	...	...	...	...	...	7871	5735	12203	13606

GRAND TOTAL—PART I, II, III

PART I—WINTER SESSION

TOTAL SECTIONS A TO F

STUDY COURSE—IT TAKES

Section A CalgaryTOTAL PART III

THE UNIVERSITY OF

PART I—WINTER SESSION

SECTION 101

Agriculture

162

Graduate Studies	4	1	5
TOTAL—SECTION C	273	369	642

SECTION D—FULL-TIME SPECIAL STUDENTS—DAYTIME CLASSES

Agriculture	2	2	4
Arts	2	1	2
Commerce	2	2	2
Education	2	8	2
Engineering	6	13	8
Physical Education	2	2	2
Science	6	2	8
UNDERGRADUATE TOTAL	27	40	64
Graduate Studies	2	2	2
TOTAL—SECTION D	29	42	66

SECTION E—PART-TIME SPECIAL STUDENTS—DAYTIME CLASSES

Agriculture	11	17	28
Arts	10	9	14
Commerce	11	11	11
Education	3	2	5
Engineering	35	28	42
Physical Education	3	1	2
Science	38	29	44
UNDERGRADUATE TOTAL	77	78	102
Graduate Studies	3	2	4
TOTAL—SECTION E	80	80	106

SECTION F—PART-TIME SPECIAL STUDENTS—EVENING CREDIT PROGRAM

Agriculture	1	8	43
Arts	14	1	22
Commerce	20	27	47
Education	21	21	21
Engineering	56	35	70
Physical Education	56	35	70
Science	56	35	70
UNDERGRADUATE TOTAL	178	135	252
Graduate Studies	56	35	70
TOTAL SECTION F	234	170	322
TOTAL—SECTIONS A-F	1781	1351	3132

SECTION G—REGISTERED UNIVERSITY OF ALBERTA STUDENTS STUDYING AT AFFILIATED INSTITUTIONS

Not applicable

TOTAL—PART I

PART II—SHORT COURSES

Not applicable

PART III—SUMMER SESSION 1963

SECTION A—CALGARY

	Degree/Diploma		M	F	Total	Special		Total
	M	F				M	F	
Agriculture	1	...	...	...	1	...	...	...
Arts	29	20	49	7	56	...	6	13
Commerce	2	...	2	...	2	...	...	...
Education	418	477	895	21	916	...	21	42
Engineering	1	...	1	1	2	...	...	...
Physical Education	3	1	4	...	4	1
Science	9	5	14	7	21	7

UNDERGRADUATE TOTAL

	463	503	966	36	1002	...	27	63
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Graduate Studies	4	...	4	...	4
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TOTAL—SECTION A	467	503	970	36	1003	...	27	63
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SECTION B—BANFF

University Credit
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TOTAL—PART III	467	503	970	36	1003	...	27	63
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GRAND TOTAL—PART I, II, III
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Total M F TOTAL
62-63 63-64

1781	1351	2522	3132
------	------	------	------

	Total		TOTAL
	M	F	
1
36	26	...	34
2	2
439	498	...	870
2	...	...	2
3	1	...	4
16	5	...	21
499	530	...	947
4	...	...	2
503	530	...	949
...	...	...	1033

...
503	530	...	949
...	...	...	1033
2284	1881	...	3471
...	...	...	4165

APPENDIX XI

Gifts

- From Harry G. Curlett, \$1,200, to cover a student summer research project under direction of Dr. J. A. L. Gilbert.
- From Foundation for International Potash Research, \$1,000, for research in the Department of Soil Science.
- From Ciba Company Limited, \$1,000, being the second quarterly instalment on a research grant awarded to Dr. Kowalewski.
- From Imperial Oil Limited, 2,000, in support of research under direction of Dr. D. B. Robinson
- From Ortho Pharmaceutical (Canada) Limited, \$1,000, for poultry research under the direction of Dr. D. R. Clandinnin.
- From Medical Research Council, \$15,000, being the second instalment of personal awards for 1963-64.
- From Medical Research Council, \$75,000, being the second instalment to the Common Grant Account for 1963-64.
- From Atomic Energy of Canada Limited, \$12,500, for continued research under the direction of Dr. J. G. Parr.
- From National Research Council, \$125,000, being a further instalment to the Common Grant Account for 1963-64.
- To the Banff School of Fine Arts Scholarship Trust Fund: \$100, from Mrs. Gertrude E. Crosby; \$100, from Mrs. A. M. Manley; \$3,000, Alberta Hotel Association; \$300, Rotary Club of Grande Prairie; \$100, Drama Festival of the Peace Committee; \$250, Canadian Women's Press Club; \$100, Alberta Electrical Supplies Ltd.; \$250, Camellia City Ballet; \$2,000, Unwin's Limited; \$400, Banff School Students' Union; \$100, Miss Norma Douglas; \$150, Dr. and Mrs. Donald Cameron; \$50, Banff Camera Shop Limited; \$200, Banff Sulphur Mountain Gondola Lift Co. Ltd.; \$50, Alberta Square Dance Institute Society; \$700, Alliance Française de Calgary; \$100, Earl of St. Andrews, I.O.D.E.; and \$100, Edmonton Branch of the Canadian Handicrafts Guild.
- To the Banff School of Fine Arts Life Insurance Marketing Institute; \$400, Mr. Hal Nutt; \$100, National Life Assurance Co.; \$100, Empire Life Insurance Co.; \$100, Manufacturers Life Insurance Company; \$100, Crown Life Insurance Company; and \$60, Mr. Hal Nutt.
- From Alliance Française de Calgary, \$100 to the Banff School of Fine Arts Foundation Fund.
- From the Canadian Life Insurance Officers Association, \$2,750, being the first instalment of 1963-64 fellowship.
- From Procter and Gamble Company, \$21,000, to the Dentifrice Study Project.
- From the Alberta Heart Foundation, \$12,250, being the first quarterly payment on grants.
- From the Muscular Dystrophy Association of Canada, \$1,600, being the last instalment of Dr. Brahm's current fellowship.
- From the Muscular Dystrophy Association of Canada, \$3,550, being the third instalment of Dr. Kay's current grant.
- From Dow Chemical Company, \$1,000, for research in crop ecology.
- From Northern Affairs and National Resources, \$4,800, to the Boreal Institute.
- From the Department of Labour, \$495, toward "Relocation of Industries in Canada" research project.
- From the Alberta Retail Implement Dealers' Association, \$60, for the purchase of agricultural books and equipment (Calgary, Library).
- From the S.C.N. Foundation, \$2,000, gift to Library, Calgary, to cover the purchase of Dr. J. O. G. Sanderson's Library.
- From the Co-op Vegetable Oils Ltd., \$200, to rapeseed meal research project under direction of J. P. Bowland.
- From the Ladies Auxiliary, Calgary Postal Employees, \$50, contribution to the University of Alberta, Calgary, Library.

From the Saskatchewan Wheat Pool, Country Elevator Division, \$500, contribution to rapeseed meal research project.

From Alberta School of Mortuary Science, \$50, gift to the University of Alberta.

From Cyanamid of Canada Limited \$1,800, contribution to research under J. P. Bowland.

From Edmonton Civic Employees, \$13,000, (through the Edmonton Branch, Canadian Cancer Society) to cover research scholarships.

From the Cosmopol Club, \$29, being a donation to the Library, Calgary, towards the purchase of "International Encyclopaedia" by Grolier.

From Calgary Brewing and Malting Co. Ltd., \$1,000, to University of Alberta, Calgary, Zoology Department.

From Alberta Teachers' Association, \$1,000, to the University of Alberta, Calgary, Library.

From Canadian Cancer Society, Alberta Division, \$3,400, to cover their four summer scholarships.

From the Women's Canadian Club, \$500, to University of Alberta, Calgary, Library.

From the Canada Council, \$200, being the second instalment of grant to specialized library collection in Slavonic Studies.

From the Alberta Tuberculosis Association, \$400, to the Committee for Social Research.

From National Research Council, \$70,000, being a further instalment to the Common Grant Account for 1963-64.

From the Department of Transport, \$2,000, for meteorological research.

From Land and Forest Conservation and Utilization Committee, \$14,800, being an interim payment on soil research project.

From National Cancer Institute of Canada, \$32,437.25, being the second instalment on 1963-64 research awards.

From Canadian Heart Foundation, \$1,750, being the first quarterly instalment for Research Associateship (Dr. E. C. Elliott).

From the Alberta Heart Foundation, \$3,000, for the support of three summer students involved in medical research.

From Canadian Cancer Society, Alberta Division, \$64,000, for renovations to McEachern Laboratory.

From the Friends of the University of Alberta, two water colour paintings by the late Walter J. Phillips, R.C.A.

From the Wm. S. Merrell Company \$500, as part of the Lunsford Richardson Award won as a first prize by Mrs. J. Nemeth. The funds are to be placed in a special account for the purchase of items for the pharmacy museum.

From the Royal Bank of Canada, Main Branch, Calgary, \$700 payable to the General Revenue as a grant-in-aid.

From the Shevchenko Foundation, \$1,500, research grant under the direction of Dr. R. L. James.

From Rayonier Canada (B.C.) Limited, \$600, contribution to the Banff School of Fine Arts Scholarship Trust Fund.

From United Farmers of Alberta Co-operative Limited, \$1,000, contribution to the Banff School of Fine Arts Foundation Trust Fund.

From the Canadian Arthritis and Rheumatism Society, Toronto, Ontario, \$233, contribution to research under the direction of Dr. R. D. Laurenson.

From Brewing and Malting Research Institute, Winnipeg, \$1,000, contribution to research program under direction of Dr. W. G. Corns.

From Mr. D. Harvie, c/o Managers, Limited, Calgary, Alberta, \$1,250 as contribution to Alberta Eye Research Fellowship.

From Mrs. Clare C. Leckie, Winnipeg, \$150, contribution to Banff School of Fine Arts Scholarship Trust Fund.

From the Francis Reeves Foundation, re Bursary, \$2,400.

From the W. K. Kellogg Foundation, Battle Creek, Michigan, \$18,321, to cover third payment of the Educational Administration agreement.

From Edcal Industrial Agents Limited, \$1,750, covering August payment of the C. W. Carry Medical Research Grant.

From Velsical Corporation of Canada Ltd., \$750, as the first payment of a research grant to Dr. W. H. Vanden Born, in support of crop ecology.

From the Sugar Association, Inc., \$2,500 for continued research under direction of Dr. R. U. Lemieux.

From Canadian Petroleum Tax Society, \$350, contribution to the Library, Calgary.

From the Canadian Cancer Society, Alberta Division, \$16,000 towards purchase of equipment for the University of Alberta Cancer Research Unit (McEachern Lab.).

From the National Cancer Institute of Canada, \$35,000, being the October instalment of the 1963-64 research awards.

From the National Research Council, \$200,000, being a further instalment to Grants for 1963-64.

From the National Research Council, \$2,000 to cover Post-doctorate Fellowship awarded to Dr. N. Rajaratnam.

From the Department of National Defence, \$13,642, being a further instalment to 1963-64 grants.

From the United Nations, World Health Organization, \$5,400 for research under direction of Dr. B. Hocking.

From the Atomic Energy Control Board, \$5,000 final payment for research under direction of E. O. Lilje.

From the Department of Mines and Technical Surveys; 6,600 to cover Geological Survey grants; \$3,500 towards mining research; and \$5,500 towards mineral processing research.

From the United Church Men, \$100 contribution to the Banff School of Fine Arts Scholarship Fund; and from Mr. Gordon Hall, \$5.

To the A. W. Downs Trust towards the capital endowment in perpetuity of the A. W. Downs prize in Physiology, \$600 from Medical Alumni Association; \$600 from A. W. Downs.

From Mrs. Victoria Hall, \$100 as a contribution to cancer research.

From Mr. and Mrs. F. J. Folinsbee, \$16,000 to establish the James Patrick Folinsbee Memorial Scholarship in Creative Writing.

From the Canadian Life Insurance Officers Association, \$5,000 contribution to the Faculty of Commerce.

From Alberta Tuberculosis Association, \$200 towards the University Committee for Social Research.

From the Muscular Dystrophy Association of Canada, \$3,550 being the last payment towards Dr. C. M. Kay's current grant.

From the Muscular Dystrophy Association of Canada, \$1,750 to cover the first quarterly instalment of Dr. Brahms' Post-Doctoral Fellowship. It was recommended by the President that the University not accept the three remaining quarterly instalments to be paid to Dr. Brahms as he is no longer connected in any way with the University of Alberta and is residing in France. The Muscular Dystrophy Association is to be informed by letter. The Executive Committee agreed.

From the Canada Department of Agriculture, \$12,358 covering two-thirds of funds requested for extramural research projects.

From the Life Underwriters' Association of Canada, \$100 contribution to the University of Alberta Banff Life Insurance Institute.

From Guaranty Trust Company of Canada, \$1,794.39 to endow the Percy Clubine Scholarship Fund.

From the Department of Forestry, \$500 towards research under direction of Dr. J. Longworth.

From Canadian Council of Urban and Regional Research, second instalment, \$5,350 towards grant awarded to Dr. E. J. Hanson.

From Medical Research Council, \$100,000 being the third instalment of the Common Grant Account for 1963-64.

From Medical Research Council, 9,500, third instalment on Personnel Awards Account Grants for 1963-64.

From Canadian Council on Urban and Regional Research, second instalment, \$750, of grant to Dr. J. G. Nelson.

From the Canada Council, \$1,000, final instalment of grant for specialized library collection in Slavonic Studies.

From National Research Council, \$2,000 towards Dr. M. H. Dodson's Post-Doctoral Fellowship.

From National Research Council, \$1,000 grant for equipment awarded to Dr. D. Yoshino.

From Alberta Medical Alumni Association, \$1,000 in support of the Committee on Research in Medical Education.

From Alberta Heart Foundation, \$12,250, second quarterly instalment on grants.

From Canadian Heart Foundation, \$1,750, first instalment of grant awarded to Dr. D. P. MacLeod.

From Canadian Heart Foundation, \$1,750, second quarterly instalment grant awarded to Dr. E. C. Elliot.

From Department of National Defence, \$13,642, advance Trust.

From National Research Council, \$1,000, grant for equipment awarded to Mr. T. A. Clark.

From National Research Council, \$2,000, towards Dr. R. V. Scowen's Post-Doctoral Fellowship.

From Ciba Company Limited, \$1,000, third quarterly instalment on Danabol research project conducted by Dr. Kowalewski.

From Husky Oil Canada Limited, \$2,500, contribution to Heavy Crude Research being conducted under the direction of Dr. D. L. Flock.

From National Office Management Association, \$250, contribution to the Library, Calgary.

From Edcal Industrial Agents Ltd., \$1,750, November quarterly payment towards C. W. Carry Medical Research Grant.

From Smith Kline and French Inter-American Corp., \$1,000, towards Program of Clinical Pharmacology.

From Engineering Institute of Canada, Calgary Branch, \$900, towards the African Students' Trust Fund.

From Dr. M. E. Hall, \$10, contribution to the Library, Edmonton.

From the National Heart Foundation, \$1,750 to cover third quarterly instalment on Research Associateship for Dr. E. C. Elliot for 1963-64.

From the Canadian Heart Foundation, \$1,750 to cover the second quarterly instalment on Research Associateship for Dr. D. P. MacLeod for 1963-64.

From the Department of Lands and Forests, Government of Alberta, \$24,400 to carry out Economic Pilot Study by Dr. T. W. Manning.

From Dowell of Canada, \$700 contribution to Faculty of Engineering.

From Mr. Donald S. Harvie, \$750 contribution to UAC Associates.

From The Edmonton Journal, \$1,000 contribution to World University Services Program.

From Modulite Inc., \$100, contribution towards the Division of Engineering, UAC

From Lions of Calgary, S.W., \$800, contribution to University of Alberta, Calgary.

From Mr. Charles Plavin, \$4,000, a further contribution to the Peace River Pioneer Memorial Education Fund.

From Hudson's Bay Oil and Gas Co. Ltd., \$100, a gift to the Geology Department, University of Alberta, Calgary.

From Mrs. M. G. Carry, \$1,500, contribution towards internal medicine research under direction of Dr. Gilbert.

From Shevchenko Foundation, \$500, contribution to Foundation's research program under direction of Dr. James.

From Shevchenko Foundation, \$50, contribution to Gonsett Memorial Library.

From Ukrainian Women's Association of St. John's Cathedral, \$25, contribution to Gonsett Memorial Library.

From Canadian Cancer Society, \$40,600 final payment of grant towards renovations and equipment for the University of Alberta Cancer Research Unit.

From Physical Education Students' Society, \$200, to Physical Education Library Trust.

From the Alcoholism Foundation of Alberta, \$627, to establish a research account, under the direction of Dr. J. D. Taylor, investigating certain effects of alcohol.

From Geigy Pharmaceuticals, \$2,500, last payment of research grant.

From the University Women's Club of Edmonton, \$100, contribution to Calgary Library.

From Dr. R. D. Haryett, \$500, contribution towards Faculty of Dentistry research program under direction of Dr. J.S. Stewart.

From United Grain Growers Limited, \$5,000, contribution towards research in the Faculty of Agriculture.

To the Banff School of Fine Arts Scholarship Trust Fund: \$100 from the Banff Rotary Club; \$65 from Performing Arts in Canada Publishing Co. Limited; \$10 from Mr. J. M. McDonald.

From North Hill United Church Women, \$10, contribution to the Calgary Library.

From the Red Deer Advocate Limited, \$100, contribution to President's Trust Fund.

From Murphy Oil Company Limited, \$500, contribution to the Heavy Crude Oil Research Program under direction of Dr. D. L. Flock.

From The Edmonton Civic Employees' Welfare Chest Fund, \$2,000, contribution to Neuromuscular Research.

Contribution to the Banff School of Fine Arts Foundation Trust Fund: \$500 from the Agricultural Institute of Canada; and \$180, Mr. Wesley Van Dusen; \$24.65, Mr. Roger H. Wilson; \$32.60, Mr. William Peterson; \$32.00 Mr. J. H. Manning; \$28.10, Mr. P. W. J. Wood; \$2595, Mr. Tevie H. Miller; \$50.75, Mr. James Allan; \$53.25, Mr. Gordon Weidman; \$49, Mr. Michael Malfesi; \$57.75, Mr. John R. Munro; \$46.50, Mr. David F. Eustace; which are 1963 premiums on life insurance policies under which the Banff School of Fine Arts is the registered beneficiary.

From the Burroughs Wellcome Fund, \$2,500, a further contribution to the program of Clinical Pharmacology.

From the Alberta Civil Service Welfare Fund Committee, \$500, contribution to the University of Alberta Cancer Research Unit.

From Velsicol Corporation of Canada Ltd., \$750, being a further contribution to the Crop Ecology research project under direction of Dr. W. H. Vanden Born.

From the National Trust Company Limited, \$167, being a further allocation to the Janet S. M. Griesbach Cancer Research Fund.

From the Canadian Arthritis and Rheumatism Society, \$750, contribution to Dr. R. D. Laurenson's research project.

From Imperial Oil Limited, \$500, grant-in-aid to the University of Alberta.

From the Multiple Sclerosis Society of Canada, \$2,700, being the final payment on Dr. J. D. Taylor's research grant.

From the Geophysical Society of Edmonton, \$100, contribution to the Seismography Laboratory.

From Devon-Palmer Oils Limited, \$600, contribution in support of Heavy Crude Oil Research Program.

From Mr. Anthony M. Mardiros, \$2,200, being the total of various contributions from friends of the late Wm. Irvine to establish the "Wm. Irvine Memorial Scholarship in Ethics".

From National Research Council, \$120,000, a further instalment to the National Research Council Common Grant Account for 1963-64.

From Department of Public Health, Government of Alberta, \$15,000, for continued research under direction of Dr. Callaghan.

From The Honourable N. D. McDermid, \$5,000, to be applied to the N. D. McDermid Trust Fund.

From the National Science Foundation, Washington, D.C., \$6,600, to Dr. R. Henderson for research in Physiology.

From the Edmonton Academy of Medicine, \$300, donation to the Medical Library.

From the Alberta Heart Association, \$12,250, being the third instalment on research grants.

From the Canadian Arthritis and Rheumatism Society, \$233, for continuing research under direction of Dr. Laurenson.

From National Cancer Institute of Canada, \$33,500, being final instalment of research awards for year ending March 31, 1964.

From National Research Council, \$46,856, to the Common Grant Account for 1963-64.

From Donald S. Harvie, \$1,250, being a further contribution to University of Alberta Eye Research Fellowship Fund.

From the United States Air Force, \$10,414.02, for continuing research under direction of G. L. Cumming.

From Medicine Hat Greenhouses Limited, \$500, being contribution to Banff School of Fine Arts Foundation Fund.

From Mr. and Mrs. W. J. Eady, \$700, contribution to Chronic Renal Research under direction of Dr. L. E. McLeod.

From Mr. O. R. Younge, \$50, contribution to the University of Alberta.

From the Birks Family Foundation, \$3,421, towards the Foundation's Bursary Plan.

From the California Standard Company, \$500, grant-in-aid.

From Sugar Research Foundation, Inc. \$51.70, further contribution towards Dr. Lemieux's research.

From Ciba Company Limited, \$1,000, fourth quarterly instalment on research grant awarded to Dr. Kowalewski.

From The Consolidated Mining and Smelting Company of Canada Limited, \$2,500, final instalment on Dr. Leja's research grant in the field of flotation.

From Edmonton Geological Society, \$626, to endow the P. S. Warren Prize in Geology.

From Calgary Life Underwriters Society, \$2,700, contribution to Calgary Library.

From The Muscular Dystrophy Association of Canada, \$3,125, first quarterly instalment on research grant awarded to Dr. C. M. Kay.

From the Medical Research Council, \$59,800.98, final instalment to Grants Account for 1963-64.

From the National Research Council, \$4,000, balance of Grant Account for 1963-64.

From the estate of Dr. Allison Proctor, a number of medical books, gown, hood, mortar board, surgical instruments, and microscope belonging to her late husband.

From the Canadian Arthritis and Rheumatism Society, \$233 toward research project under direction of Dr. R. D. Laurenson.

From Ukrainian Canadian Research Foundation, \$1,500 further contribution to Ukrainian Foundation Trust Fund (formerly known as the Shevchenko Foundation).

From the Institute of Chartered Accountants, \$75 contribution to the Faculty of Commerce for the purchase of books.

From Dr. John F. McKeage, \$20 contribution to the Faculty of Medicine.

From The Proctor and Gamble Company, \$9,600 in support of dental research under the direction of Dr. W. A. Zacherl.

From South Park Motors Ltd. and Employees, \$50 contribution toward Blindness Research project being conducted by Dr. T. A. S. Boyd.

From Maple Leaf Mills Limited, \$400 in support of Soft Wheat research project.

From College of Physicians and Surgeons, \$5,000 contribution to Medical Library.

From Western Canada Ropes Ltd., \$100, 1964 contribution to the University of Alberta.

From M. A. R. Craig, \$250, 1963 contribution to Craig Library Fund.

From the Canada Council, \$1,000, granted for use in connection with the scholarship awarded to Robert F. Manuel.

From the Canada Council, \$2,500, full payment of grant for purchase of items in collection in Slavonic Studies.

From Medical Research Council, \$1,565.04, final instalment of Personnel Awards Account for 1963-64.

From National Research Council, \$2,000 for Post Doctorate Fellowship awarded to A. Beer.

From Mr. W. C. Harris, \$1,000 contribution to the Banff School of Fine Arts Foundation Fund.

To the Banff School of Fine Arts Scholarship Trust Fund; \$70 from Miss Marion McRoberts; \$25 from Mr. W. E. Boivin.

From Foundation for Dental Education (Alberta) \$6,280, to the Dental Trust Fund.

From Searle Grain Company Ltd., \$250 contribution to Soft Wheat Research Project.
 From Cyanamid of Canada, \$1,800 being the 1964-65 grant for research under the direction of Dr. Wm. G. Evans.
 To Blindness Research Project under direction of Dr. T. A. S. Boyd; \$10 from Mrs. Richard Upton; \$25 from Mr. Ernest C. Lourme.
 From Saskatchewan Co-op Credit Society, \$2,000 contribution to the Agricultural Economics Research Project.
 From Foundation for Dental Education (Alberta), \$6,280 contribution to Dental Education Trust Fund.
 From Provo Gas Producers Limited, \$2,000 contribution to Heavy Crude Oil Research Project.
 From The Atlantic Refining Company, \$300 contribution to Petroleum and Reservoir Engineering research program.
 From Mr. Donald S. Harvie, \$1,250 further contribution to the Eye Research Project.
 From Frank W. Horner Limited, \$750 contribution to the Biochemistry Library.
 From Junior League of Calgary, \$2,000 contribution to the Sociology Review Trust Account.
 From G. D. Searle and Co. of Canada Limited, \$500 contribution to the Symposium on Muscle.
 From Canadian Heart Foundation, \$1,750 being the last quarterly instalment on 1963-64 Research Associateship for Dr. E. C. Elliot.
 From Canadian Heart Foundation, \$1,750 being the last quarterly instalment on 1963-64 Research Associateship for Dr. D. P. McLeod.
 From National Cancer Institute of Canada, \$4,500 being the first instalment to cover grants awarded to J. O. Metcalfe and W. Paranchych.
 From The Edmonton Civic Employees' Welfare Chest Fund, \$13,000 for support of research workers in the Surgical Medical Research Institute.
 From Canadian Arthritis and Rheumatism Society, \$233 for support of research under direction of Dr. R. D. Laurenson.
 From the Medical Research Council, \$175,000 being the first instalment of the grants for 1964-65.
 From the Medical Research Council, \$10,469 being the balance of grants to Dr. C. W. Nash.
 From Mr. J. M. McDonald, \$10 contribution to the Banff School of Fine Arts Scholarship Fund.
 From Federated Co-operatives Limited, \$750 contribution to Nitrogen Fertilizer research.
 From Canadian Foundation for the Advancement of Therapeutics, \$1,000 towards the Clinical Pharmacology research program.
 From FBA Pharmaceuticals Limited, \$3,000 towards the Experimental Trasylol study being conducted by Dr. Williams.
 From Mr. A. M. Mardiros, \$118 being a further contribution to the Wm. Irvine Memorial Scholarship in Ethics.
 From Fargo Oils Limited, \$700 contributions to the Heavy Crude Oil Research project.
 From Robin Hood Floor Mills Ltd., \$400 contribution to Soft Wheat Breeding project.
 From Women's League of the Calgary Philharmonic Society, \$100 gift to the Calgary Library.
 From Mr. G. L. Crawford, Q.C., \$500 to cover the Judge J. L. Crawford Fellowships awarded to Messrs. I. L. Head and Wm. Angus.
 From Royal Trust Company, \$1,500 grant to the Faculty of Commerce
 From The Alberta Heart Foundation, \$3,000, donated by the Edmonton Civic Employees Welfare Chest Fund, in support of three student Summer Research Scholarships in the Faculty of Medicine.
 From The Alberta Heart Foundation, \$12,000, to cover fourth quarterly instalment on research grants.
 From the Muscular Dystrophy Association of Canada, \$4,875, to cover the second instalment on grants awarded to Dr. C. Kay and Dr. W. Green.
 From National Research Council, \$640,000, being the first instalment on 1964-65 grants.

From Medical Research Council, \$30,000 to cover the first instalment on 1964-65 grants.

From National Health and Welfare, \$6,528.66, towards Fitness Research Pilot Study.

To the Banff School of Fine Arts Scholarship Fund: \$150 from the Students' Council of the 1964 Executive Development Course, and \$200 from M. Grumbacher of Canada Limited.

To the University of Alberta Banff Life Insurance Marketing Institute, \$100 from the Edmonton Life Managers' Association.

To the Blindness Research Project being carried out by Dr. T. A. S. Boyd: \$20 from Mr. James Hoyle; \$5 from Mr. Rolf Schmidt; \$50 from the South Edmonton Lions Club; \$10 from Mr. G. J. Deibert.

From Mr. Robert A. Logan, one microfilm copy of a 1,150 page Cree-English dictionary, to the Library.

From Ciba Company Limited, \$500, contribution toward the purchase of books and periodicals for the Physiology and Pharmacology Reading Room.

From the Department of Citizenship and Immigration, \$2,150, to the Ukrainian Foundation Trust.

From the Canadian Foundation for Advancement of Pharmacy, \$750, for research on Amines.

From the Canadian Foundation for Advancement of Pharmacy, \$250, in support of a project to investigate the utility of slides as a teaching tool in certain pharmacy courses.

From Fruehauf Trailer Company of Canada Limited, \$400, toward student assistance in the Faculty of Physical Education.

From Chemcell (1963) Limited, \$5,000, in support of research on reactions of unsaturated free radicals.

From Alberta Veterinary Medical Association, \$25, contribution to the Extension Bursaries Fund.

From Alberta Wheat Pool, \$3,500, in support of alfalfa research.

From Medical Research Council, \$17,000, covering second instalment on 1964-65 grants.

From United States Air Force, \$8,478.45, second instalment on research grants.

From Canadian Arthritis and Rheumatism Society, \$233, for research under direction of Dr. R. D. Laurenson.

From the Department of National Defence, \$11,760, toward research grants.

From the Medical Research Council, \$1,500, contribution to Muscle Symposium held in June, 1964.

From W.U.S. local Committee, \$300, toward International Students Emergency Fund.

From National Cancer Institute of Canada, \$48,665.28, first instalment on 1964-65 grants.

From Faculty of Commerce Students' Seminar, \$50, contribution to the Banff School of Fine Arts Development Fund.

From the Honourable Senator F. W. Gershaw and Mrs. Gershaw, \$200, contribution to the Banff School of Fine Arts Scholarship Fund.

From Mrs. Fred tSapells, the gown, hood, and mortar-board belonging to the late Dr. Fred Stapells.

From Mrs. G. C. Paterson, the gown, hood, and mortar-board belonging to the late Dr. Paterson.

From Major A. Cathcart-Bruce, a sculptured limestone head of Bodhisatva; and a Polyglot Bible in a sandalwood case.

From Dr. R. F. Nicholls, books, instruments and cabinets to the Faculty of Medicine.

From Protective Holdings Ltd., \$4,000 towards research under the direction of Dr. J. A. L. Gilbert.

From Canadian Renderers Association Incorporated, \$2,000 towards the research project under the direction of Dr. J. P. Bowland.

From Geigy (Canada) Ltd., \$1,500 towards research under the direction of Dr. R. A. Macbeth.

From Abbott Laboratories, \$100 contribution towards Physiology-Pharmacology Reading Room.

From University Women's Club, Calgary, \$100 donation to Calgary Library.

From John Wyeth and Brother (Canada) Limited, \$300 contribution to the Faculty of Medicine.

From Alcoholism Foundation of Alberta, \$825 gift to cover purchase of Breathalyzer.

From Ciba Company Limited, Pharmaceutical Division, \$2,500 to Dr. Mahon's Clinical Pharmacology Research Program.

From Dr. A. M. Mardiros, \$47 further contribution to Wm. Irvine Memorial Scholarship in Ethics.

From the Canada Council, \$1,750 to Conference on Indigenous Languages of North America.

From Eldorado Mining and Refining, \$5,000 being first payment as per 1964 Research Agreement.

From the Muscular Dystrophy Association of Canada, \$2,500, being the first quarterly instalment of the grant to Dr. T. Nihei.

From the Muscular Dystrophy Association of Canada, \$2,500, being the first quarterly instalment of award covering the salary of Dr. T. Nihei.

From the Canadian Arthritis and Rheumatism Society, \$233 for research under the direction of Dr. R. D. Laurenson.

From Canadian Council on Urban and Regional Research, \$3,000 being the third instalment of a grant to Dr. Eric J. Hanson.

From Ecole d'Assurance de Montreal, \$4,200 to the University of Alberta Banff Life Insurance Marketing Institute.

To Banff School of Fine Arts Scholarship Trust Fund: \$200 from Canadian Women's Press Club; \$100 from Canadian Handicrafts Guild; \$500 from Provincial Chapter of Alberta I.O.D.E.

From Mrs. E. H. Moss, 575 specimens of rust fungi collected by her late husband, gift to the Botany Department, Edmonton.

APPENDIX XII

New Scholarships, Prizes and Awards

- A second Joseph Dolson Oliver Mothersill Memorial Award, for a woman student who has made an outstanding contribution to the University in the field of extra-curricular activities; a capital sum of \$5,000 over a period of four years has been provided.
- The James Patrick Folinsbee Memorial Scholarship in Creative Writing of \$800 will be offered annually to a graduate of outstanding ability whose primary interest is in the field of creative writing and who will be pursuing a post-graduate degree program in English literature.
- The Sherritt Gordon Mines Limited Graduate Scholarship in Metallurgy of \$2,000 will be offered annually to a student of outstanding merit doing post-graduate work in Metallurgy.
- The Film Services (Alberta) Limited Scholarship of \$500 is offered annually to a student of outstanding merit entering 4th year Pharmacy preferably in the Pharmacy Administration Program.
- The Chemical Institute Prize in Chemistry (Calgary) of \$25 in books is awarded annually to the student in Honors Chemistry in Calgary who obtains the highest standing in the work of the third year provided that the student's record is otherwise satisfactory to the Faculty Council.
- The Hotel York Scholarship of \$250 is offered annually to a student of outstanding merit in Drafting 151 in first year Engineering at Calgary. To be considered, the student must have passed all courses of the full first year, and have a general average of not less than 75%.
- The Inland Cement Company Scholarship of the value of \$600 is offered annually to a student of outstanding merit entering the fourth year of Civil Engineering. The award is based on the work of the third year. To qualify, a student must have

- completed a third year program of normal weight at the University of Alberta and have attained an average of at least 75%.
- The Sherritt Gordon Mines Limited Scholarship in Chemical Engineering of \$300 will be awarded annually to a student of outstanding merit entering fourth year Chemical Engineering.
- The Gilbert M. Blackstock Scholarship of \$250 in memory of the late Mr. Blackstock will be awarded for outstanding merit in the work prescribed for the first year of Law. Need as well as academic standing may be taken into consideration. (The award will be offered for four years beginning 1964-65.)
- Hudson's Bay Company Tuition Awards in Commerce. Two awards of the value of tuition and fees for fourth year Commerce are offered by Hudson's Bay Company, Edmonton, to two students who have an interest in a career in merchandising. They will be offered full-time employment during the summer preceding the fourth year.
- The P. S. Warren Prize in Geology of \$100, provided by the Edmonton Geological Society, will be awarded to a non-graduating student for outstanding achievement in Geology 201 at Edmonton provided the student's record is otherwise satisfactory.
- The Percy Clubine Memorial Scholarships of \$500 each will be awarded annually to two students who are entering the first year of the Faculty of Agriculture of the University of Alberta, conditional on a minimum Grade XII average of 70%.
- The Calgary Branch Canadian Physiotherapy Association Book Prize will be awarded to an outstanding student graduating with the Diploma in Physical Therapy, on a basis of academic standing, practical work and general personality.
- The German Government Book Prizes (Calgary) will be awarded to two students for outstanding merit in German 372 or 380 and in German 400 or 450. A prize may not be awarded to the same student more than once.
- The Dr. R. R. McIntyre Memorial Scholarship of \$200, provided by the Calgary and District Dental Society, will be awarded annually to a student completing third year Dentistry for outstanding merit in Interceptive and Preventive Orthodontics providing an academic standing of at least 75% has been attained on the whole years' work.
- The Association of Professional Engineers of Alberta Matriculation Awards. The Association will provide six awards of the value of tuition and fees for the first year to six students on the following basis: the awards will be given to the student with the highest average standing on Mathematics 30, Mathematics 31, Chemistry 30 and Physics 30 in each of Edmonton and Calgary and the general areas of Lethbridge, Medicine Hat, Red Deer and Peace River provided such students enter Engineering, Geology or Geophysics at the University of Alberta.
- The Albert J. Hrapko Memorial Prize of \$100 is offered annually by members of his family in memory of Mr. Hrapko who graduated from the University of Alberta in 1951 and who died in 1964, to a student of outstanding merit entering the Electronic pattern of 4th year in the Department of Electrical Engineering.
- The Ukrainian Canadian Committee Scholarship of \$100 is offered annually to a student of outstanding merit in Ukrainian Literature 360 provided the student's record is otherwise satisfactory.
- The Engineering Institute of Canada, Calgary Branch, Scholarship of \$100 is offered annually to a student of outstanding merit completing the second year of Engineering at the University of Alberta, Calgary and entering the third year of Engineering at Calgary or Edmonton.

APPENDIX XIII

Theses Completed—November, 1963

Degree of Doctor of Philosophy

- Ralph William Ansley, B.A., B.Sc. (Queen's University at Kingston), M.Sc. (Alberta) "Hydraulic Transport of Fluidized Solids in Open Channel Flows." (Civil Engineering—Fluid Mechanics), Edmonton

- Donald Grant Bellow, B.A.Sc. (British Columbia), M.Sc. (Alberta) "Anticlastic Behaviour of Flat Plates." (Mechanical Engineering—Applied Mechanics), Edmonton
- Samuel Braverman, B.Sc. (Bar-Ilan University) "The Rearrangement of Allylic Arenesulfonates." (Chemistry), Israel
- Ronald Anderson Steven Brown, B.Sc. (Alberta), M.S. (California Institute of Technology) "The Mechanics of Large Gas Bubbles in Tubes." (Chemical Engineering), Edmonton
- Michael Edward Charles, B.Sc. (University of London), M.Sc. (Alberta) "The Co-Current Stratified Flow of Two Immiscible Liquids in a Rectangular Conduit." (Chemical Engineering), Calgary
- William Arthur Green, B.Sc.(General), B.Sc.(Special Chemistry) (University of London) "Hydrodynamics and Optical Rotatory Dispersion Studies on Fetuin." (Biochemistry), Edmonton
- Thomas Barr Greenfield, B.A. (British Columbia), M.Ed. (Alberta) "Systems Analysis in Education: A Factor Analysis and Analysis of Variance of Pupil Achievement." (Educational Administration), Edmonton
- Garth George Iverach, B.Sc. (Alberta) "Minor Alkaloids of *Lycopodium annotinum* L." (Chemistry), Calgary
- Harold Jackson, B.Sc., M.Sc. (University of Nottingham) "A Study of the Bacteria in Raw Bulk Tank Milk." (Dairy Science), Edmonton
- Gareth Hubert Stanley Jones, B.Sc. (University of Wales), M.A. (Toronto), "Strong Motion Seismic Effects on the Suffield Explosions." (Physics), Ralston
- Abdul Aziz Khan, B.Sc. (Agra University), M.Sc. (Aligarh Muslim University) "Effects of Repellents on Mosquito Behavior." (Entomology), Karachi, Pakistan
- William George Laidlaw, B.Sc. (Western Ontario), M.Sc. (California Institute of Technology) "Applications of the Variational Method." (Chemistry), Edmonton
- Derek Alwyn Law, B.Sc.(General), B.Sc.(Honors) (University of Liverpool) "The Alkaloids of *Lycopodium Clavatum* var. *Megastachyon*." (Chemistry), Edmonton
- Brian Ernest Leggetter, B.Sc.(General), B.Sc.(Special) (University of London) "The Hydrogenolysis of Cyclic Acetals and Ketals." (Chemistry), Nottingham, England
- Ajai Mansingh, B.Sc., M.Sc. (Agra University) "Effects of Malathion on Water Content and Metabolism in *Blattella germanica* L." (Entomology), Fatehpur, India
- Mangalath Neelakanta Paniker Sukumaran Nayar, B.Sc. (Benares Hindu University), M.Sc. (Allahabad University) "Chemistry of the *Taxaceae*." (Pharmacy), Kerala, India
- Steve Nick Odynak, B.Ed. (Alberta) "The Alberta Teachers' Association as an Interest Group." (Educational Administration), La La Biche
- Frederick Martin Phelps III, B.A. (Carleton College), M.S. (Michigan) "Precision Wavelength Measurements of the Vacuum Spectra of Mercury 198 and Krypton 86 in the Visible and Ultraviolet." (Physics), Spokane, Washington
- Edward Piers, B.Sc. (Alberta) "1. The Synthesis of Mercaptoindoles. 2. The Rearrangement of Allyl 2,6-Dihalophenyl Ethers." (Chemistry), Edmonton
- Jean-Yves Rousseau, B.Sc. (Laval) " Hg^{63}P_1 Atoms with Hydrocarbons." (Chemistry), St. Etienne, Quebec
- Robert Clark Rumpfolt, B.Sc. (Loyola) "The Radiation Chemistry of Hydrogen Halides." (Chemistry), Calgary
- John Reginald Trollope, B.Sc., M.Sc. (Alberta) "Exact Solutions of the Einstein-Maxwell Equations that Determine Null Fields." (Mathematics), Edmonton
- Degree of Master of Arts*
- EElizabeth Ester Bruce, B.A. (Toronto) "Pound and Browning: Image and Persona." (English Literature), Edmonton
- Vera Kilian Corfield, B.A. (Alberta) "An Analysis of the Social Characteristics Associated with University Attendance in the Province of Alberta 1921-1961." (Sociology), Edmonton
- Laurence Lee Coyne, B.P.E. (Alberta) "The Relationship of Maximal Oxygen Intake to Body Composition and Total Body Weight in Active Males." (Physical Education), Edmonton

- William Ray Ellenwood, B.A. (Alberta) "The Fictitious Editor in the Periodicals of Steele and Addison." (English Literature), Edmonton
- George Bohdan Foty, B.A. (British Columbia) "A Survey of the Mythology of Kievan Rus, and its Survivals in the Folklore of the Eastern Slavs." (Slavonic Language), Saskatoon, Saskatchewan
- Roderick Douglas Fraser, B.A. (Alberta) "The Paretian Optimum Conditions of Welfare Maximization as a Guide to Policy." (Political Economy), Calgary
- Ronald Kirkwood House, B.A. (Mount Allison) "Value Judgments in Welfare Economics: An Examination of the Compensation Principle as an Attempt to Circumvent Value Judgments in the Marginal Cost, Pricing Controversy." (Political Economy), St. John's Newfoundland
- John Albert Jenkinson, B.Sc. (University of Liverpool), B.Ed., M.Ed. (Alberta) "The Concept of a Transcendent Deity." (Philosophy), Edmonton
- Denis Bruce Johnson, B.A. (British Columbia) "A Functional Comparison of the Central Retail District with Two Regional Shopping Centres in Calgary, Alberta." (Geography), Calgary
- Ian Cameron Kennedy, B.A. (Alberta) "Banks, Intermediaries and Monetary Policy." (Political Economy), Edmonton
- Terence Richard Lee, B.Sc. (University of London) "A Manufacturing Geography of Edmonton, Alberta." (Geography), Sutton Coldfield, England
- Rosalind Marjory MacKenzie, B.A., (Toronto) "Visual Perception in Cerebral Palsied Children." (Psychology), Winnipeg, Manitoba
- June Rosemary McMaster, B.A. (Toronto), B.Ed. (Acadia) "Melville and Mother: Myth and Symbol in the Early Novels." (English Literature), Edmonton
- William Alan Meloff, B.A., (Alberta) "An Investigation of the Self-Images of Jewish Children Attending A Summer Camp." (Sociology), Edmonton
- James Rae Melvin, B.Sc. (Manitoba) "The Effects of International Capital Movements on Employment Under a Flexible Exchange Rate." (Political Economy), Pierson, Manitoba
- Ronald William Ramsay, B.A. (University of Witwatersrand) "Verbal Conditioning in a Social Situation." (Psychology), Jasper Place
- Harold Owen Ricker, B.Com. (Alberta) "The Tax Status of Capital Gains in Canada." (Political Economy), Edmonton
- Gunter Herbert Schaarschmidt, "The History and Practice of Interior Monologue in the Soviet Novel." (Russian), Edmonton
- Stephen Paul Symchych, B.A. (British Columbia) "Similarities and Divergences in The Works of N. V. Gogol and H. F. Kvitka." (Slavonic Languages), Vancouver, British Columbia.
- Degree or Master of Science*
- Robert George Auld, B.A.Sc. (British Columbia) "A Prototype Viscometer for Time-Dependent Fluids." (Chemical Engineering), Edmonton
- Satish Chandra Batra, B.Sc. (University of Rajasthan) "The Effect of Some Milk Salts on the Stability of the Calcium Caseinate-Phosphate Complex." (Food Science), New Delhi, India
- Ursula Mary Elizabeth Bielenstein, B.Sc. (Alberta) "The Approximate Distribution of the Correlation Between Two Stationary Linear Markov Series with Fitted Means." (Mathematical Statistics), Edmonton
- Wytze Brouwer, B.Sc. (Alberta) "Representations of Some Finite Groups." (Mathematics), Edmonton
- Arthur Aubrey Brown, B.A.Sc. (Toronto) "Asphalt Stabilization of a Marginal Aggregate." (Civil Engineering), Holstein, Ontario
- Lorne Edwin Carlson, B.Sc. (Alberta) "Nanosecond Beam Burst Production." (Phycis), Edmonton
- Robert Bertram Church, B.Sc. (Alberta) "Inheritance and Interrelations of Live Performance and Carcass Characteristics in Beef Cattle." (Animal Genetics), Edmonton
- Roy Dennis Cook, B.Sc. (Alberta) "Some Effects of Closed System Freeze-Thaw Cycles on a Compacted, Highly Plastic Clay." (Civil Engineering), Onoway

- Leonard Allen Cooper, B.P.E. (Alberta) "A Comparison of the Effects of Short Intensive and Prolonged Intensive Exercise Programs on Treadmill Performance and Certain Cardio-Respiratory Functions." (Physical Education), Edmonton
- David Arthur Cunningham, B.A. (Western Ontario) "The Effect of Breathing High Concentrations of Oxygen on Treadmill Performance and Selected Physiological Variables." (Physical Education), Leaside, Ontario
- James Douglas Dale, B.Sc. (Alberta) "An Experimental Study of Injection of Superheated Steam into the Combustion Chamber of a Gas Turbine." (Mechanical Engineering), Edmonton
- Albert de Leeuw, B.Sc. (Alberta) "The Mutagenic Action of Nitrous Acid and Ultra-violet Light on Conidia of *Neurospora Crassa*." (Genetics), Genemuiden, Holland
- Tevfik Fikret Demirkan, B.Sc. (University of Ankara) "Heterosis in Barley." (Genetics), Ankara, Turkey
- Jerome Alexander Dempsey, B.A. (Western Ontario) "Anthropometrical and Physiological Observations of Obese and Non-obese Young Men Undergoing a Program of Vigorous Physical Exercise." (Physical Education), London, Ontario
- James Frederick Easton, B.Sc. (Alberta) "Gas Scintillation." (Physics), Calgary
- Carl Norman Ellert, B.Sc. (Alberta) "Some Physical Properties of Pneumatically Placed Concrete." (Civil Engineering), Edmonton
- Constance Marguerite Fenyvesi, B.Sc. (Alberta) "Error Correcting Code." (Mathematics), Calgary
- David Franklin Goble, B.Sc. (Alberta) "A Search for a Proposed New Level of Be⁷." (Physics), Waterton Park
- Laurel Everett Goodrich, B.Sc. (Alberta) "A Quadrupole Lens Ion Source for Mass Spectrometers." (Physics), Hardisty
- Charles Ernest Johnson, B.Sc. (Alberta) "Premian *Spiriferella* from the Yukon Territory." (Geology), Calgary
- Rolf Kellerhals, dipl. ing. ETH (Swiss Institute of Technology) "Gravel Rivers with Low Sediment Charge." (Civil Engineering), Edmonton
- Arthur Kuhn, B.A.Sc. (British Columbia) "Nonlinear Systems and Nonlinear Programming." (Numerical Analysis), Edmonton
- William Brooks Landers, B.Sc. (British Columbia), B.Sc. (Alberta) "The Effect of Concrete Compressive Strength on Transfer Bond of Prestressed Members." (Civil Engineering), Corvallis, Oregon
- Albert Daniel Laplante, B.Sc. (Alberta) "Triaxial Shear Strength Characteristics of Some Sands Stabilized with Foamed and Emulsified Asphalts." (Civil Engineering), Edmonton
- Douglas James McClure, B.A.Sc. (Toronto) "Interpretation of Long Aeromagnetic Profiles." (Physics), Edmonton
- June Elizabeth Rapson McGugan, B.Sc. (University of London) "Lithology and Petrography of Transitional Jurassic-Cretaceous Clastic Rocks, Southern Rocky Mountains." (Geology), Calgary
- Bertram Campbell McInnis, B.Sc. (Alberta) "The Temperature Dependence of the Photo-conductivity in Cuprous Oxide." (Physics), Turner Valley
- Douglas Barry Mackay, B.A. (New Brunswick) "The Effects of Prolonged Shock on Habituation." (Psychology), Edmonton
- Robert Allen McNabb, B.Sc. (Alberta) "Contribution of Dietary and Environmental Iodine to Iodine Balance of Rainbow Trout (*Salmo gairdnerii*)." (Zoology), Medicine Hat.
- Harold James McPherson, B.A. (Queen's University of Belfast) "The Glacial Geomorphology of the Upper Red Deer River Valley." (Geography), Edmonton
- Ray Dennis Magus, B.Sc. (Alberta) "The Role of Serotonin Release in the Effect of Reserpine on the Central Nervous System and the Thyroid Gland." (Pharmacy), Edmonton
- Barry James Mailloux, B.Sc. (Alberta) "Numerical Solution of Differential Equation." (Mathematics), Edmonton
- Garry Seymour Marliss, B.Sc. (Alberta) "The Numerical Solution of Functional Equations Arising in Stochastic Learning Models." (Numerical Analysis), Edmonton

- Robert Frederick Charles Marriott, B.Sc. (Alberta) "The Effect of Turbulence on Current Meter." (Civil Engineering), Edmonton
- Huan-Mei Mei, B.Sc. (National Chung Cheng University) "Studies on the Detection of Antibiotics in Raw and Processed Milk." (Dairy Science), Taipei, Taiwan
- Larry Patrick Milligan, B.Sc. (Alberta) "A Study of the Role of Thiamine and Biotin in the Metabolism of Rumen Microorganisms." (Animal Nutrition), Okotoks
- Bernard Terence Arthur Newland, B.Sc. (University of Exeter) "On the Diffusion of Radiogenic Argon from Potassium Feldspars." (Geology), Greenford, England
- Spencer Tracy Nichols, B.Sc. (Alberta) "Optimization and Control of Dynamic Systems." (Electrical Engineering), Edmonton
- William Keith Nicholson, B.Sc. (Alberta) "Two-Dimensional Flows Under Gravity with a Free Surface." (Applied Mathematics), Vegreville
- Ganapat Shankar Pandit, B.E. (University of Jabalpur) "Torsion in Concrete Sections." (Civil Engineering), Nagpur, India
- Edward Alfred Leo Preston, B.S.A. (Toronto) "The Rearrangement and Substitution of Some Triphenylmethyl Arylsulfinates." (Chemistry), Spanish Town, Jamaica
- Arie Reedyk, B.Sc. (Alberta) "Search for A 5.6 Mev Level Li⁷." (Physics), Edmonton
- John Robert Richardson, B.P.H.E. (Toronto) "The Effect of Brief Isometric and Isotonic Exercise Programmes on the Development of Strength and Muscular Endurance." (Physical Education), Edmonton
- Hong Yee Tso, B.S. (National Taiwan University) "A Study of Laterally Loaded Thin Flat Plates by the Moiré Method." (Mechanical Engineering—Applied Mechanics), Hong Kong
- Constantinus Gerhard van Zyll de Jong, B.S.A. (Toronto) "The Biology of the Lynx, *Felis (Lynx) canadensis* (Kerr) in Alberta and the Mackenzie District, N.W.T." (Zoology), Toronto, Ontario
- Ronald Wills, B.Sc. (University of Hull) "Effects of Specific Solvation on Kinetic Activation Parameters of Some Benzyl Halides in Binary Solvent Mixtures." (Chemistry), Calgary
- James Victor Zidek, B.Sc. (Alberta) "Asymptotic Distributions of Response Probabilities for a Stochastic Learning Model." (Mathematical Statistics), Edmonton
- Degree of Master of Education*
- Howard Grant Ambury, B.Ed. (Alberta) "A Bibliographic Survey of the Literature Concerning the Place of Grammar in the Teaching of English Language in the Junior and Senior High Schools." (Secondary Education—English), Chauvin
- Ted Tetsuo Aoki, B.Ed. (Alberta), B.Com. (British Columbia) "The Development of Lethbridge School District No. 51 to 1960." (Educational Foundations), Lethbridge
- Robert Leonard Cecil Baker, B.A., B.Ed. (Alberta) "A Comparative Study of Techniques Used to Implement the Study of Current Events." (Secondary Education—Social Studies), Edmonton
- Eldon Henry Bliss, B.A. (Manitoba), B.Ed. (Alberta) "A Study of Objectives and Procedures in Teaching of Literature in Seventy Junior High School Classrooms in Alberta." (Secondary Education—English), Red Deer
- Alec Thomas Brace, B.A. (Memorial University of Newfoundland) "The Pre-School Child's Concept of Number." (Elementary Education), St. John's Newfoundland
- Elsie Bradshaw, B.Ed. (Alberta) "Patterns of Perceptual Performance in Children Who Are Severely Retarded in Reading." (Elementary Education), Edmonton
- Chesley Kenneth Brown, B.Sc. (McGill) "The Development of Teacher Tenure Legislation In Alberta." (Educational Administration), St. John's, Newfoundland
- Arrigo Chiste, B.Ed. (Alberta) "The Development of the Elementary Social Studies Program in Alberta." (Elementary Education), Lethbridge
- Arthur John Cropley, B.A. (University of Adelaide) "Socio-economic Status and the Development of Intelligence." (Educational Psychology), Edmonton

- Mervyn Norman Guy Eastman, B.Ed., B.A., (Alberta) "A Semantic Differential Analysis of the Concept School." (Educational Psychology), Edmonton
- Betty Ewart Evans, B.Ed. (Alberta) "Criteria to Evaluate Plays for Junior High School Classrooms." (Elementary Education), Edmonton
- Melvin Robert Fenske, B.Ed. (Alberta) "Administrative Duties of Principals and Vice-Principals in an Alberta School Division." (Educational Administration), Oyen
- Mary Kathleen Francoeur, B.Ed., B.Paed. (Laval) "Factors of Satisfaction and Dissatisfaction in the Teaching Profession." (Educational Administration), Montreal, P.Q.
- Edward Llewellyn James, B.Ed. (Alberta) "An Historical Survey of Education in the Strathmore Area of Alberta, 1900-1958." (Educational Foundations), Calgary
- Charles Douglass Ledgerwood, B.Ed. (Alberta) "Some Personal and Professional Characteristics of Alberta School Principals, 1958." (Educational Administration), Athabasca
- Peter Bucknil Lowe, B.A. (Victoria University of Manchester) "Technical and Vocational Training in Alberta—A Descriptive Study of its Development." (Educational Administration), Manchester, England
- Ivan Burdette Mallett, B.Ed. (Alberta) "A Study of Factors Associated with Failure in Selected Subject Areas of Grades Ten and Eleven." (Educational Administration), Stettler
- John Roger Meredith, B.A., B.Ed. (British Columbia) "A Comparison of Courses of Studies in Secondary Schools of Canada." (Secondary Education—Curriculum), Victoria, British Columbia
- Marion Grace Mersereau, B.Ed. (Alberta) "A Survey of the Instructional Procedures for the Teaching of the Shakespearean Drama in English 30." (Secondary Education—English), Edmonton
- Derek Vivian Morris, B.Ed. (Alberta) "Staff Characteristics and Principal Leadership." (Educational Administration), Calgary
- Michael Edward James Orme, B.Ed. (Alberta) "Dogmatism in Parent-Child Relationships." (Educational Psychology), Calgary
- John Whitmore Peach, B.A., B.Ed. (Manitoba) "Procedures and Criteria Used in Selecting Administrative Personnel in Large Urban School Systems in Western Canada." (Educational Administration), Edmonton
- Wilma Leona Phipps, B.A. (Saskatchewan), B.Ed. (Alberta) "A Descriptive Study of the Teaching of English Language 21 (Creative Writing) in Alberta High Schools." (Secondary Education—English), Edmonton
- Ruth Esther Randall, B.Ed. (Alberta), M.L. (Washington) "The Training of Teachers for Social Studies Instruction." (Secondary Education—Social Studies), Edmonton
- Florence Harriet Scofield, B.A., B.D. (Alberta) "The Concept of the Individual Man According to Marx, Gorky and Makarenko, with Educational Implications." (Educational Foundations), Edmonton
- Sister Jean Berchmans Leroi, B.Ed. (Alberta) "An Investigation into the Foyer-Ecole Movement in Saskatchewan." (Educational Administration), St. Louis, Saskatchewan
- Robert Charles Stewart, B.Ed. (Saskatchewan) "A Description and Appraisal of Enrichment Provided for and Facilitated in Special Class Programs for Academically Talented Pupils in the Saskatoon Public Elementary School System." (Educational Administration) Prince Albert, Saskatchewan
- Samuel Boyd Taylor, B.Ed. (Saskatchewan) "A Study of Organizational Plans for the Teaching of Physical Education in the Elementary Schools of Saskatchewan." (Elementary Education), Regina, Saskatchewan
- Otto George Tucker, B.A. (Ed.) (Memorial University of Newfoundland) "The Origin and Development of Regional and Central High Schools in the Province of Newfoundland." (Educational Administration), St. John's, Newfoundland
- Henry Harold Unrau, B.Ed. (Alberta) "An Experimental Comparison of the Relative Effectiveness of Two Problem Solving Procedures Taught to Educable Mentally Retarded Boys." (Secondary Education—Mathematics), Sherwood Park

Stanley Bertram Whitbread, B.Ed. (Alberta) "A Proposal for School Guidance Utilization of Children's Drawings." (Educational Psychology), Edmonton

Theses Completed—May, 1964

Degree of Doctor of Philosophy

Thomas Kennedy Alexander, B.A., M.Sc. (British Columbia) "Nuclear Reaction Studies of Baron ¹² in Oxygen¹⁷." (Physics), Edmonton

Muhammad Ahmad Arshad, B.Sc., M.Sc. (Panjab University) "Chemical and Mineralogical Characteristics of Some Solonchic Soils in Relation to Their Genesis." (Soil Science), Lahore, West Pakistan

Armand Boudreau, B.S.A. (University of Montreal) "The Specific Distribution of Fatty Acids in Glycerides of Milk Fat." (Dairy Science), Montreal, Quebec

Franco Romano Calaresu, M.D. (University of Milan) "An Electrophysiological Study of Peripheral and Central Cardiomotor Activity of the Vagus Nerve." (Physiology), Milan, Italy

Douglas Roy Colton, B.A. (Saskatchewan), B.Sc., M.Sc. (Alberta) "The Effect of a Magnetic Field on Interdiffusion in Dilute Aluminum-Copper Solid Solutions." (Metallurgical Engineering), Edmonton

Richard Harvey Enns, B.Sc. (Alberta) "Ultrasonic Absorption and Dispersion in Monoatomic Gases." (Physics), Edmonton

Ronald Austin Fletcher, B.Sc. (University of Delhi), M.S.A. (British Columbia) "Photomorphogenetic Effects of Regions in the Visible Spectrum of Certain Plant Species." (Plant Physiology and Biochemistry), Edmonton

John Albert Goldak, B.Sc., M.Sc. (Alberta) "High Precision Measurements of X-ray Diffraction Intensities." (Metallurgical Engineering), Edmonton

Stephen Harold, B.A. (Saskatchewan) "Urinary Indole Acetic Acid." (Clinical Biochemistry), Regina, Saskatchewan

Erik Hjortenbergh, M.Sc. (University of Copenhagen) "Microseisms in Alberta." (Geophysics), Copenhagen, Denmark

Ernest Daniel Hodgson, B.Ed., M.Ed. (Alberta) "The Nature and Purposes of the Public School in North West Territories (1885-1905) and Alberta (1905-1963)." (Educational Administration), Edmonton

Alan Mitchell Hogg, B.Sc. (University of Edinburgh) "I. The Addition of Methyl Radicals to Vinyl Chloride. II. Mass Spectrometry of Lycopodium Alkaloids." (Chemistry), Edinburgh, Scotland

Roy Vernon Jardine, B.A. (Montana State University) "The Synthesis of Some 3-Indole Thioethers." (Chemistry), Edmonton

Harland Euclid Johnson, B.Sc. (Alberta) "Stress Corrosion Cracking of Alpha Brass." (Metallurgy), Edmonton

Peter Charles Lent, B.A. (University of Alaska) "Calving and Related Social Behaviour in the Barren-Ground Caribou." (Zoology), College, Alaska

Robin Arthur McLaren, B.Sc. (University of Edinburgh) "The Solvolysis and Rearrangement of α -arylethyl 2,6-dimethylbenzenesulfonates." (Chemistry), Edinburgh, Scotland

William Charles Olsen, B.A.Sc. M.A.Sc. (British Columbia) "The Alpha-Particle Breakup of the 12.71 and the 11.83 MeV Levels in C¹²." (Physics), Deep River, Ontario

Rintje Raap, Cand.Sc. (State University at Groningen) "I. Ester (p-Tolysulfonyl) hydrazones. II. Alkoxyamines and Alkoxyhydrazines." (Chemistry), Edmonton

Erhard Rudolph Reinelt, B.Sc. (Alberta), M.A. (Toronto) "The Propagation of Anomalous Sound from Large Explosions." (Physics), Edmonton

Frank Price Robinson, Jr. B.A., (Fisk University) "A Study of the Fischer Indole Synthesis." (Chemistry), Victoria, British Columbia

Ajit Singh, B.Sc. (Agra University), M.Sc. (Benares Hindu University) "Gamma Radiolysis of Liquid Cyclohexanone." (Chemistry), Indore, India

Chaitanya Singh, B.Sc., M.Sc. (University of Lucknow) "Palynology of the Manville Group (Lower Cretaceous), Central Alberta." (Geology), Lucknow, India

- Brian Ralph Wakeford, B.Sc. (Alberta) "Radiolysis of Liquid Cyclohexene." (Chemistry), Edmonton
- Yves-Francois Zoltvany, B.A. (Loyola College), M.A. (Université de Montréal) "Philippe de Rigaud de Vaudreuil, Governor of New France (1703-1725)." (History), Montreal, Quebec
- Degree of Master of Arts*
- Patricia Louise Baxter, B.A. (Alberta) "The Use of Myth and History in the Novels of Neil M. Gunn." (English), Edmonton
- Douglas Irl Ditto, B.A. (Alberta) "The Criticism of Civilization in Carlyle and Arnold." (English), Calgary
- Neil Jeffrey Gamble, B.A. (Toronto) "The Effect of Alcohol and Amphetamine Upon Bender-Gestalt Reproductions." (Psychology), Edmonton
- Eric Joseph Holmgren, B.A. (British Columbia), B.L.S. (Toronto) "A Discussion of the Britannia Colony as an Episode in Western Canadian Development." (History), Edmonton
- Lyle Brian Jones, B.A., B.D. (Alberta) "The Psycho-Epistemological Profile: Its Scoring, Validity and Reliability." (Psychology), Strathmore
- Yu-Hsin Kao, B.S. (Taiwan Provincial College of Agriculture) "Effects of Public Law 480 Surpluses on Economic Development with Special Reference to Taiwan." (Economics), Taipei, Taiwan
- Barry Allan Kerr, B.P.E. (British Columbia) "The Effect of Strength Training Upon Speed of Movement and Reaction Time in a Knee Extension Movement." (Physical Education), Edmonton
- Helen Fletcher Kerr, B.Ed. (Alberta) "An Analysis of Counting." (Philosophy), Alberton, P.E.I.
- John Earl Millman, B.A. (British Columbia) "A Psychometric Analysis of Welfare Worker Characteristics." (Psychology), Edmonton
- Serena Phillet, B.A. (Alberta) "An Analysis of Community Influence: Some Conceptual and Methodological Considerations." (Sociology), Edmonton
- Alan Thomas Rees-Powell, B.A. (University of Leicester) "Differentials in the Integration Process of Dutch and Italian Immigrants in Edmonton." (Sociology), Edmonton
- Sharon Lea Richman, B.A. (Alberta) "The Faces: A Verse Play." (English), Edmonton
- David Phillips Ross, B.A. (Alberta) "The Causes of Labour Disputes in Alberta, 1955-1962: An Analysis of Collective Bargaining Criteria." (Economics), Edmonton
- Aaron Sawatzky, B.Comm. (Saskatchewan), B.Ed. (Alberta) "The Mennonites of Alberta and Their Assimilation." (History), Medicine Hat
- Norbert Franz Laurenz Schuldes, B.A. (Alberta) "Frege's Concepts of Sinn and Bedeutung." (Philosophy), Edmonton
- Alvin Glen Scott, B.Sc. (Alberta) "California Psychological Inventory Personality Characteristics of Mothers of Antisocial Adolescents." (Psychology), Grande Prairie
- James Paul Scott, B.A. (Alberta) "The Eastern Campaigns of Antiochus the Great." (Ancient History), Edmonton
- Frederick Harold Telmer, B.A. (Alberta) "An Analysis of the Iron and Steel Industry in Alberta." (Economics), Edmonton
- John Llewelyn Williams, B.A. (Alberta) "Personal Space and its Relation to Extraversion-Introversion." (Psychology), Edmonton
- Kenneth Ray Williamson, B.Ed. in P.E. (Alberta) "Quantitative Strength Changes Resulting from Varied Isometric Contractions." (Physical Education), Edmonton
- Henri G. Wittmann, Diploma (University of Paris) "A Contrastive Study of Animal Terms in Hittite and Gothic." (Indo-European Comparative Philology), Edmonton
- Lorette Kathleen Yeudall, B.A. (Alberta) "Response Patterns of Institutional and Normal Adolescent Girls on Problem Check-lists." (Psychology), Edmonton

Degree of Master of Science

- Shaukat Abbas, B.A. (University of Rajasthan), M.A. (Aligarh Muslim University)

- "The Approximate Distribution of the Serial Correlation of a Prestationary Linear Marcov Process." (Mathematical Statistics), Hyderabad, Pakistan.
- William Sanderson Adams, B.Sc. (Alberta) "Probabilistic and Deterministic Aspects of Digital Computers." (Numerical Analysis), St. Albert
- Sandford Lane Barter, B.Sc. (Alberta) "Eccentrically Loaded Concrete Columns." (Civil Engineering), Edmonton
- Julius George Bekesi, B.Chem.Eng. (University of Budapest) "The Effect of Malignant Disease on Human and on Rat Plasma Glycoprotein." (Biochemistry), Edmonton
- Hans Uwe Bielenstein, B.Sc. (Alberta) "The Miette Formation, Jasper, Alberta." (Geology), Edmonton
- Brian Bowers, B.Sc. (University of Birmingham) "Flow of Gas-Solid Mixtures in Vertical Circular Ducts, I: Calibration and Use of Air Velocity Measuring Devices." (Chemical Engineering), Sarnia, Ontario
- Inder Lal Budhiraja, B.Sc. (University of Delhi) "Effect of Wettability of Porous Media on Oil Recovery by Water Flood." (Petroleum Engineering), Delhi, India
- David Ashworth Burns, B.Sc. (Victoria University of Manchester) "An Investigation into the Buckling of Light Clamped Arches." (Mechanical Engineering—Applied Mechanics), Runcorn, Cheshire, England
- Henry Neal Collins, B.Sc. (Alberta) "High Viscosity Crude Oil Displacement in a Long Unconsolidated Sand Pack Using a Native Brine." (Petroleum Engineering), Edmonton
- Jack Norman Dardick, B.Sc. (Queen's University at Kingston) "The Effect of Motivation on Underwater Performance in Two Strains of Inbred Mice." (Psychology), Kingston, Ontario
- Stanley Roy Didrikson, B.Sc. (Alberta) "Vibration of Thin-Walled Open Section Beams Subjected to Axial Load." (Mechanical Engineering), Edmonton
- Ralph Clarence Dorward, B.Sc. (Alberta) "The Effect of a Magnetic Field on Normal Segregation in Aluminum (Rich)—Copper Alloys." (Metallurgical Engineering), Edmonton
- Colin Duncan, B.Sc. (Alberta) "Multi-component Inhibitors in the Acid Corrosion of Steel." (Metallurgical Engineering), Edmonton
- Denis Bernard Joseph Fillion, B.Sc. (Alberta) "The Benthic Fauna of Three Mountain Reservoirs in Alberta." (Zoology), Vancouver, British Columbia
- Delwyn George Fredlund, B.E. (Saskatchewan) "Comparison of Soil Suction and One-Dimensional Consolidation Characteristics of a Highly Plastic Clay." (Civil Engineering), Norquay, Saskatchewan
- David William Gomersall, B.Sc. (University of Liverpool) "Transformations in Iron-Manganese Alloys." (Metallurgy), Skipton, Yorkshire, England
- Yvonne Elizabeth Goodman, B.Sc. (Alberta) "*Pasteurella multocida* in Humans, Application of Serology and the Methods of Numerical Taxonomy to the Classification of Strains, and a Consideration of Antibody as an Index of Infection." (Bacteriology), Edmonton
- Donald Edwald Harder, B.Sc. (Alberta) "Factors Influencing the Severity of Cereal Anthracnose in Alberta." (Plant Pathology), Rosemary
- Manfred Reinert Hausmann, Diploma in Civil Engineering (Swiss Federal Institute of Technology) "Technology of Some Alberta Soil Series." (Civil Engineering), Berne, Switzerland
- William Lancelot Haworth, B.Sc. (University of Liverpool) "The Effect of Rapid Heating on the Alpha to Gamma Transformation in Iron." (Metallurgical Engineering), Edmonton
- David Bruce Kerr Innes, B.Sc. (Alberta) "X-Ray Diffraction Investigation of Silver-Copper Eutectic Alloy Amalgam." (Metallurgical Engineering), Edmonton
- Garry Russel Jackson, B.Sc. (Alberta) "Rational Approximations." (Numerical Analysis), Edmonton
- Daulat Singh Khamersra, B.Sc., M.Sc. (University of Rajasthan) "Basal Belly River Sandstone (Upper Cretaceous), Pembina Field, Alberta, Canada." (Geology), Rajasthan, India

- Khursheed Alam Kahn, B.A., M.A. (Pure Mathematics), M.A. (Applied Mathematics) (University of Karachi) "Axially Symmetric Gravitational Fields in General Relativity." (Applied Mathematics), Karachi, Pakistan
- Elizabeth Victoria Luchka, B.Sc. (Alberta) "The Influence of Carbon Dioxide and Specific Inorganic Cations on Vascular Smooth Muscle Contractility." (Pharmacology), Edmonton
- Arthur Garry McMullen, B.Sc. (Alberta) "The Transformations in Zirconium-Niobium and Zirconium-Niobium-Oxygen Alloys." (Metallurgical Engineering), Edmonton
- Roy Eugene Graham Murray, B.Sc. (Mount Allison University) "Helminths of Cricetidae with Special Reference to *Clethrionomys Tilesius*, 1850." (Zoology), Moore's Mills, New Brunswick
- Giovanni Giuseppe Nascimbene, Doctor in Geological Science (University of Pavia) "Bentonites and the Geochronology of the Bearpaw Sea." (Geology), Edmonton
- Wayne Edward Nysetvold, B.Sc. (Alberta) "A Theoretical and Experimental Investigation of the Knoop Hardness." (Mechanical Engineering—Applied Mechanics), Edmonton
- Peadar Anthony O'Callaghan, B.Sc. (National University of Ireland) "Some Aspects of the Chemical Disinfection of Pipe-Line Milking Machines." (Food Science), Newmarket, Ireland
- Paul Paetkau, B.Sc. (Alberta) "The Taxonomy and Ecology of the Hydridae (Hydrozoa) of Alberta and the Northwest Territories." (Zoology), Edmonton
- Charles Algernon Patrick, B.Sc. (University of Karachi) "Approximate Distribution Functions of Certain Sample Serial Correlation Co-efficients." (Mathematical Statistics), Edmonton
- Daniel Richmond Prowse, B.Sc. (Alberta) "The Rheological Behaviour of a Thixotropic Model." (Chemical Engineering), Edmonton
- Alan Brian Ransom, B.S.A. (Manitoba) "Reproductive Biology of White-Tailed Deer in Manitoba." (Zoology), Winnipeg, Manitoba
- Vijay Kumar Rohatgi, B.Sc., M.Sc. (University of Delhi) "On Some Combinatorial Problems Arising in Probability Theory and Statistics." (Mathematical Statistics), Delhi, India
- Avinash Chandra Saxena, B.Chem.Eng. (University of Bombay) "Vapour-Liquid Equilibria in a Quaternary Natural Gas System." (Chemical Engineering), Jaipur, India
- George Elias Shipley, A.B. (University of California) "Reversible Generation of Second Sound." (Physics), Edmonton
- Vinod Tarkeshwar Sinha, B.Chem.Eng. (University of Bombay) "Turbulent Velocity Distribution in a Rectangular Conduit." (Chemical Engineering), Bombay, India
- Joan Amelia Stratton, B.Sc. (Alberta) "Cytotoxic Isoantibodies Against Cells of the Reticulo-Endothelial System in Inbred Mice." (Medical Laboratory Science), Edmonton
- John Michael Strong, B.Sc. (Alberta) "The Effect of Delamination on the Shear Strength of Glulam Beams." (Civil Engineering), Edmonton
- Donald Harry Timbres, B.Sc. (Alberta) "The Debye Temperature and Hardness of Copper-Nickel Alloys." (Metallurgical Engineering), Edmonton
- Masaru James Tsujita, B.Sc. (Utah State University) "Some Effects of N⁶ Benzyladenine on the Morphology and Post-Harvest Physiology of Radish (*Raphanus sativus* L.) and Cabbage (*Brassica oleracea* L. var. *capitata* L.)." (Plant Science—Horticulture), Iron Springs
- Andrew Louis Vagvolgyi, B.Sc. (Alberta) "Palynology of Type McMurray Formation." (Geology), Edmonton
- Frederick Williamson, B.Sc. (Alberta) "A Study of Concrete Freeze-Thaw Durability and Air Void Parameters." (Civil Engineering), Calgary

Degree of Master of Education

- Arthur Melbourne Arbeau, B.Sc., B.Ed. (Alberta) "A Survey of Pupil Grouping Practices in Grades I to XII in Alberta Schools." (Educational Administration), Edmonton

- Henry Charles Brown, B.Ed. (Saskatchewan) "The Role of the Principal in Centralized Schools in a Rural Area of Saskatchewan." (Educational Administration), Kelliher, Saskatchewan
- Harry Chomik, B.Ed., B.A. (Alberta) "A Descriptive Survey of Certification of School Principals in Canada and the United States." (Educational Administration), Vegreville
- Bernard Rene D'Aoust, B.A., B.Ed. (Alberta) "Concept Attainment as a Function of Stress Personality and Sex." (Educational Psychology), Edmonton
- Arthur Howard Elliott, B.Sc., B.Ed. (Alberta) "Some Effects of Programmed Instruction of Grade Eight Language." (Educational Administration), Fort Saskatchewan
- Raymond Garry Fast, B.Ed. (Saskatchewan) "Leader Behaviour of Principals as it Relates to Teacher Satisfaction." (Educational Administration), Calmar
- James Emmett Gallagher, B.Ed. (Alberta) "A Descriptive Analysis of Industrial Arts in Alberta." (Secondary Education—Industrial Arts), Edmonton
- Donald Walter Hepburn, B.A., B.Ed. (Alberta) "An Investigation of Teachers' Judgments of Educable Mentally Handicapped and Other Weak Students in Elementary Classes." (Educational Psychology), Edmonton
- Walter Leslie Hughes, B.Sc., B.Ed. (Alberta) "A Study of the Development of the Secondary School Physical Science Program in Alberta." (Secondary Education—Physical Science), Edmonton
- Harry Klufas, B.A., B.Ed. (Alberta) "An Analysis of the Relationship Between Four Selected Characteristics of Teachers and the Results of Their Students in the Final Examinations in Physics 30." (Educational Administration), Redwater
- Phillip Aloysius Lamoureux, B.Ed. (Alberta) "The Application of Linguistic Principles to the Teaching of a First-Year Course in High School French." (Secondary Education—French), St. Paul
- Thomas McKendry, B.Ed. (Alberta) "A Survey and Analysis of the Activities of Edmonton's Home and School Associations." (Educational Administration), St. Albert
- Rudolph Steve Melnychuk, B.Sc., B.Ed. (Alberta) "Academic Achievement of Pupils in the Edmonton Continuous Progress Plan." (Educational Administration), Edmonton
- Gertrude Marion Nelson, B.Ed. (Alberta) "Enrichment Studies in Mathematics for Gifted Students in Grades Nine and Ten in the Small High School." (Secondary Education—Mathematics), Edmonton
- Alice Gwendolyn Olson, B.Ed. (Alberta) "An Evaluation of a Plan for Grouping Children for Reading in the Fourth, Fifth, and Sixth Grades." (Secondary Education), Red Deer
- Allan Francis Olson, B.Ed. (Alberta) "A Survey and Analysis of Classroom Procedures in Teaching Social Studies in the Junior High Schools in Alberta." (Secondary Education—Social Studies), Spruce Grove
- Lucien Loel Ouellette, B.Ed. (Alberta) "Patterns of Public School Expenditures and Services in Selected Areas of Alberta." (Educational Administration), Medicine Hat
- John Baptiste Percevault, B.Ed. (Alberta) "Rural School Administration Costs in Alberta." (Educational Administration), Bonnyville
- Patrick Joseph Quinlan, B.Ed. (Alberta) "The Evaluation of Transition Classes for Low Achievers." (Elementary Education), Edmonton
- Joseph William Quinn, B.A., B.Ed. (St. Francis Xavier University) "An Investigation of the Validity and Dimensionality of Anxiety Scales." (Educational Psychology), Edmonton
- Leonard Douglas Ramsey, B.Ed. (Alberta) "The Meaning of the Literature Appreciation Mark on the Division II Report Card of the Edmonton Public School System." (Secondary Education—English), Edmonton
- John Ephraim Read, B.Ed. (Alberta) "An Analysis of the Zone Testing Program in Central Alberta." (Educational Administration), Castor

- Alexander Romaniuk, B.Ed. (Alberta) "An Evaluation of the Effectiveness in the First Grade Readiness Testing Program as Used in West Jasper Place Public Schools." (Educational Administration), Edmonton
- Harry Gordon Sherk, B.Ed. (Alberta) "The Expectations and Perceptions of Principals for the Role of the Provincially Appointed Superintendent of Schools in Alberta." (Educational Administration), Pincher Creek
- Norman Albert Sheritt, B.A., B.Ed. (British Columbia) "An Evaluation of the Contribution of Extra-Curricular Activities to the Accomplishment of Educational Objectives." (Educational Administration), Cloverdale, British Columbia
- Dorothy Fern Tetley, B.Ed. (Alberta) "The Relationship of Certain Teacher Characteristics to Pupil Achievement in Reading." (Elementary Education), Red Deer
- Harry Thompson, B.A., B.Ed. (British Columbia) "Leadership and the Provincial Superintendent." (Educational Administration), Whitehorse, Yukon Territories
- Lawrence Andrew Truckey, B.Ed. (Alberta) "Comparison of Achievement of Grade Nine Students in Selected Single Grade and Multi-Grade Classes in Alberta." (Educational Administration), Mayerthorpe
- John Robert Wright, B.Ed. (Alberta) "A Survey and Analysis of Local Home and School Activities in the Edmonton Area." (Educational Foundations), Edmonton

APPENDIX XIV

DEGREES AND DIPLOMAS AWARDED

Degrees Awarded

	November 1963	May 1964	June 1964	Total
Arts and Science:				
B.A.	97	248	.....	345
B.Sc. (Arts)	53	163	.....	216
B.Mus.	2	2	.....	4
Agriculture:				
B.Sc. ....	.....	31	.....	31
Commerce:				
B.Com.	6	92	.....	98
Dentistry:				
D.D.S. ....	.....	.....	39	39
Education:				
B.Ed.	291	176	.....	467
B.Ed. in Ind. Arts	8	.....	.....	8
B.Ed. in Agric. ....	.....	1	.....	1
Engineering:				
B.Sc. in Chem. Eng.	1	33	.....	34
B.Sc. in Civil Eng.	9	45	.....	54
B.Sc. in Elec. Eng.	4	46	.....	50
B.Sc. Mech. Eng.	4	41	.....	45
B.Sc. in Metall. Eng. ....	.....	6	.....	6
B.Sc. in Mining Eng.	1	2	.....	3
B.Sc. in Petroleum Eng.	1	2	.....	3
B.Sc. Eng. Physics ....	.....	3	.....	3
Household Economics:				
B.Sc.	3	21	.....	24
Law:				
LL.B.	5	40	.....	45
Medicine:				
B.Sc. in M.L.S.	1	.....	13	14
M.D. ....	.....	.....	54	54
B.Sc. in Medicine	1	.....	.....	1
Nursing:				
B.Sc.	5	.....	25	30
Pharmacy:				
B.Sc.	10	.....	52	62
Physical Education:				
B.P.E.	7	31	.....	41
Graduate Studies:				
M.A.	19	22	.....	41
M.Sc.	47	44	.....	91

M.Ed.	31	29	.....	60
Ph.D.	22	24	.....	46
B.D. Committee:				
B.D.	4	3	....	7

Diplomas Awarded

	November 1963	May 1964	June 1964	Total
Arts and Science:				
Dip. in Art .....	.....	1	.....	1
Music—Licent.	1	.....	.....	1
Assoc.	6	7	.....	13
Nursing:				
Nursing	79	.....	83	162
Public Health Nursing .....	.....	.....	14	14
Teaching and Supervision .....	.....	.....	17	17
Physical Therapy .....	.....	11	.....	11
Occupational Therapy .....	.....	1	.....	1
Dental Hygiene	19	19
Faculty of Education	10	28	38

Department of Agricultural Economics

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Department of Agricultural Engineering

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Department of Anatomy

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